



Alternative Alignment Feasibility Study 183rd Street SE to Filbert Road



March 2012

Prepared by



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Snohomish County
Public Works

North Creek Trail Final Alternative Alignment Feasibility Study

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
AASHTO	American Association of State Highway and Transportation Officials
GIS	geographic information system
GMA	Growth Management Act
NGPA	Native Growth Protection Area
PUD	Public Utility District
SR	State Route
WSDOT	Washington State Department of Transportation

1. WHAT IS SNOHOMISH COUNTY PROPOSING AND WHY?

In 2010, Snohomish County Public Works began Phase 1 of its plan to build a section of the North Creek Trail between State Route (SR) 524 and 183rd Street SE west of the Bothell-Everett Highway (SR 527). The proposed trail will be part of a coordinated regional system that will eventually connect the Sammamish River/Burke-Gilman Trail in King County with the Snohomish County Regional Interurban Trail in Everett. This proposed trail connection is also included in the Countywide Bicycle Facility System in the Snohomish County Transportation Element of the Growth Management Act (GMA) Comprehensive Plan, which was published in 2008. Figure 1 depicts the proposed connection in relation to other regional trails.

The proposed trail is intended to safely accommodate bicyclists, pedestrians, runners, wheelchair users, in-line skaters, and other non-motorized users. It will be designed to meet the needs of different ages and skill levels within those groups. The trail will provide access to recreation, employment, and retail centers; improve local connections between communities and neighborhoods; provide an alternative to driving from one place to another; encourage physical activity; and connect to other existing trails and pedestrian facilities.

So far, Snohomish County completed the following:

- Identified possible trail alignments based on field work;
- Developed and applied criteria for evaluating the alternative alignments;
- Used the results to eliminate some alignments, refine the analyses and design concepts for the remaining alignments, and introduce new alignments in an iterative process; and
- Identified a preferred alignment.

Throughout this process, Snohomish County has held a series of open houses to engage the public and seek public comment. This feasibility study describes the process for evaluating alternatives and concludes with the identification of a preferred alternative. Snohomish County will move forward with design in support of right of way planning and environmental review for the preferred alignment.

Phase 1 covers evaluation of alternative alignments and preliminary design and right of way acquisition for the preferred alignment. Phase 1 is funded by King County and managed by Snohomish County as part of an agreement to mitigate the impacts of the Brightwater Wastewater Treatment Plant. Phase 1 is expected to be completed in 2015. Snohomish County will seek grant funding for the permitting and construction phases of the project. Potential funding sources include the state Recreation and Conservation Office and the Federal Highway Administration.

2. PROJECT TERMINI AND STUDY AREA

Snohomish County identified the project termini and study area based on connectivity to the overall regional trail system.

The southern terminus of the proposed project is the north side of SR 524. The City of Bothell is responsible for designing and constructing improvements to the North Creek Trail through Centennial Park to SR 524, connecting to the proposed project. Figure 2 shows a portion of the trail to the south that has already been constructed. While there are gaps in the Bothell portion of the North Creek Trail system, plans are in place for completing the system, making a connection to the Sammamish River/Burke-Gilman Trail in the vicinity of Cascadia College.

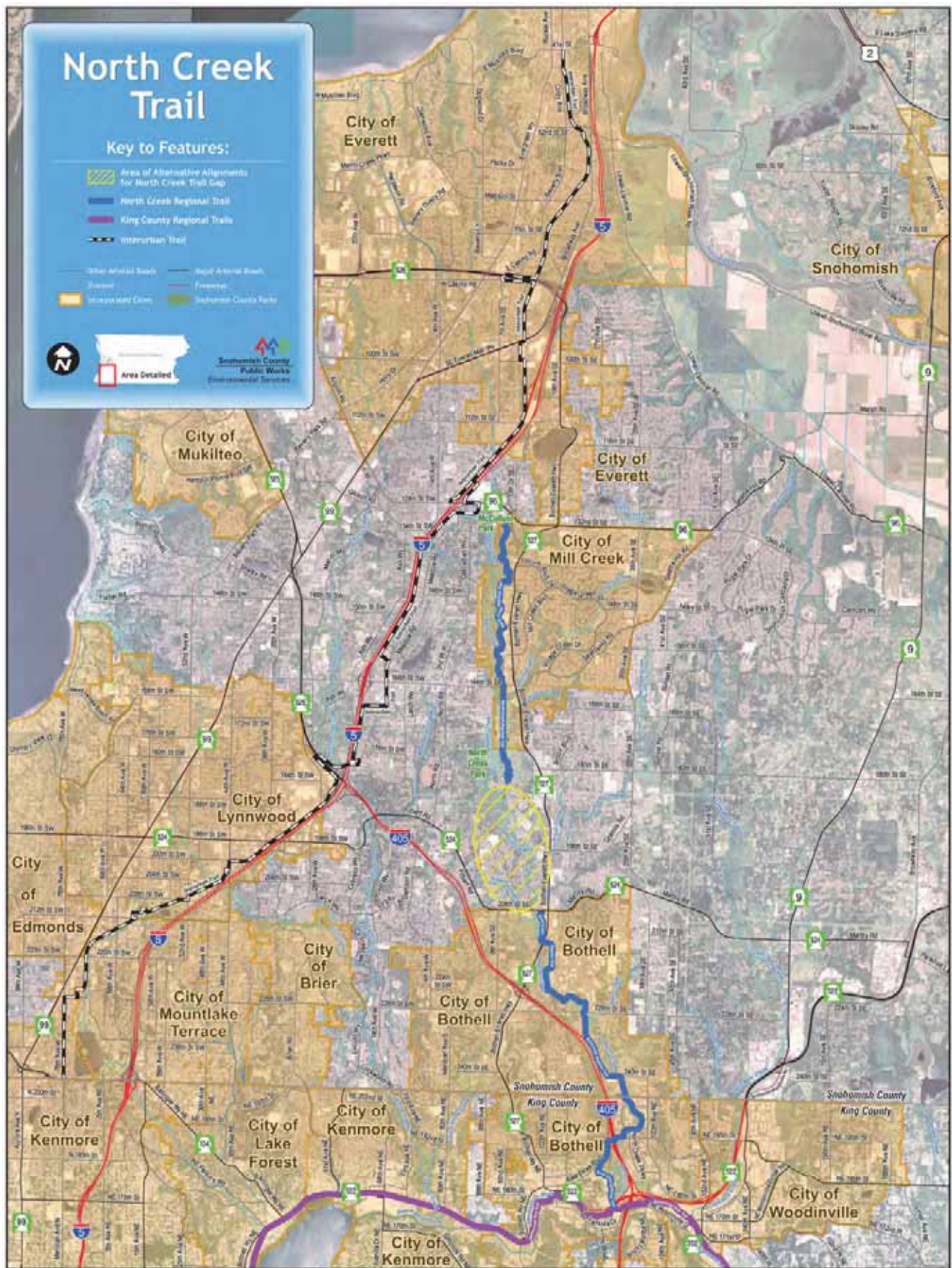


Figure 1
Regional Trail Connections



Figure 2. North Creek Trail along Fitzgerald Road in Bothell

The northern terminus of the proposed project is North Creek Park located on 183rd Street SE. Snohomish County and the City of Mill Creek have constructed North Creek Trail improvements through North Creek Park. While there are gaps in this portion of the North Creek Trail system, it will ultimately connect to the Interurban Trail in the vicinity of McCollum Park. An example of the Interurban Trail is shown in Figure 3.



Figure 3. Interurban Trail

Based on the above termini and the desire to make a relatively direct connection to the existing trails, a study area was defined encompassing SR 524, Bothell-Everett Highway (SR 527), 183rd Street SE, and Filbert Road/North Road.

3. WHAT IS A REGIONAL TRAIL?

A regional trail is a multi-use non-motorized transportation facility that is regionally significant, provides recreational opportunities, and enhances regional mobility and travel. This study evaluates four configurations, as described further below: separated trail, sidepath, bike lanes and sidewalks, and elevated boardwalk.

Under ideal conditions, a regional trail is a “shared use path” as defined by the American Association of State Highway and Transportation Officials (AASHTO):

“Shared use paths are facilities on exclusive right-of-way and with minimal cross flow by motor vehicles.... Users are nonmotorized and may include but are not limited to: bicyclists, in-line skaters, roller skaters, wheelchair users (including non-motorized and motorized), and pedestrians, including walkers, runners, people with baby strollers, people walking dogs, etc. These facilities are commonly designed for two-way travel.”

For the purpose of this report, the separated, shared use path is referred to as a “separated trail.” The typical section for a separated trail is shown in Figure 4. This typical section meets the AASHTO recommendations for a shared use path located within the urban growth area by incorporating a paved trail width of 12 feet and 2-foot shoulders on each side. This is a preferred trail layout where an exclusive right of way corridor is available.

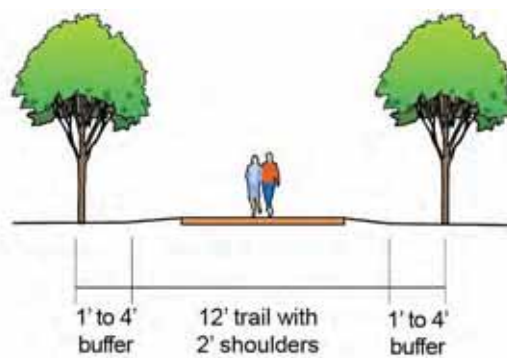


Figure 4. Separated Trail

In urban settings around the Pacific Northwest, it is often difficult to find exclusive right of way that is not constrained by the presence of or in proximity to one or more of the following:

- Steep slopes,
- Wetlands,
- Streams, and
- Floodplains.

In the absence of other opportunities, the location of a trail within a road right of way is often considered. Two different configurations can be considered: (1) a sidepath layout, or (2) bike lanes with sidewalks, depending on the existing conditions.

For the purpose of this report, a sidepath is a two-way multi-use trail located adjacent to a roadway. AASHTO guidelines suggest that when two-way multi-use trails are located adjacent to a roadway, wide separation between the trail and the adjacent roadway is desirable. The sidepath configuration is shown in Figure 5 and meets AASHTO recommendations by incorporating 12 feet of pavement with 2-foot shoulders and a minimum of 5 feet of separation from the adjacent roadway. This sidepath is appropriate where there are limited or infrequent driveway crossings, or where adjacent roadway speeds and vehicle volumes warrant a configuration that separates vehicular traffic from non-motorized users.

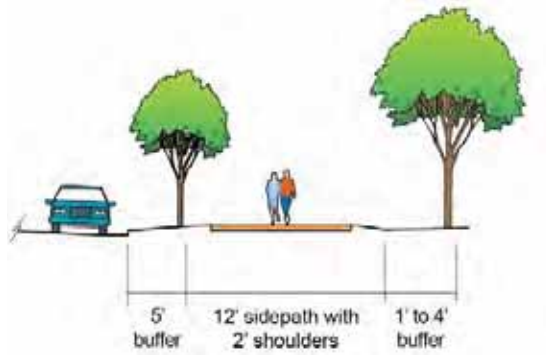


Figure 5. Sidepath

In densely developed urban areas, the alternative configuration of 5-foot bike lanes with 5-foot sidewalks can be considered (Figure 6). Improvements typically are symmetrical to the existing roadway. Although this layout does not technically meet the design criteria of a regional trail, it provides a cost-effective solution for providing a continuous route for bicycle and pedestrian users through areas that are densely developed or where existing sidewalks are in place on an intermittent basis.

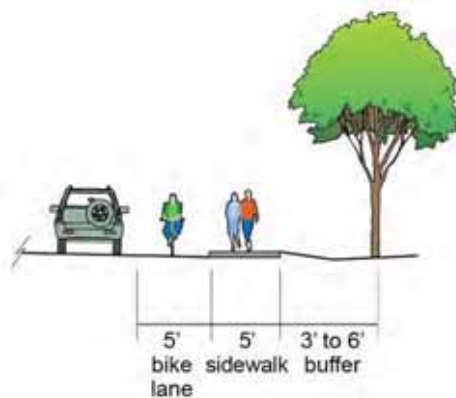


Figure 6. Bike Lanes and Sidewalks

When an alignment traverses wetlands or floodplains, an elevated trail system (e.g., boardwalk on pin piles) is often considered to minimize the amount of fill in the sensitive areas (Figure 7). The boardwalk sits above the wetland surface and floodplain elevation. Likewise, when an alignment crosses a stream, a bridge or culvert structure is used. The dimensions of the bridge section are similar to those of the elevated trail structure.

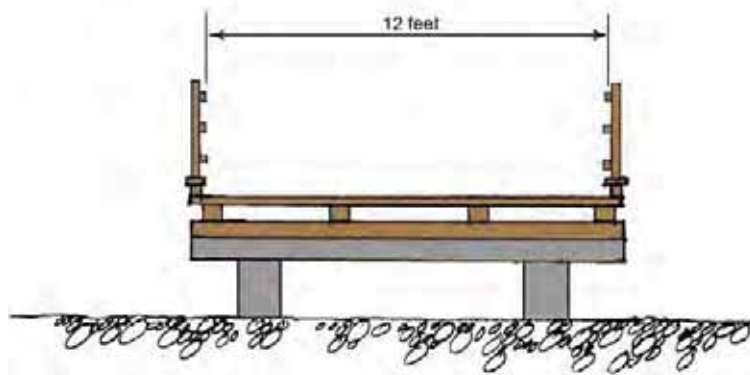


Figure 7. Boardwalk on Pin Piles

Typically, surface drainage from a separated trail, sidepath, or sidewalk is adequately dissipated and dispersed to the sides of the facility. If drainage flow control is required, low impact development measures such as porous asphalt pavement, an infiltration trench, or a bioretention system could be considered.

To evaluate each alternative alignment, one of the four configurations was selected depending on existing conditions, as described in Section 4.

4. IDENTIFICATION OF ALTERNATIVE ALIGNMENTS

The first step in identifying alternative alignments is to identify undeveloped and publicly owned corridors (i.e., exclusive right of way) where trail development could occur. Within urban areas, these corridors are typically limited to former railroad rights of way; parks or open space property; undevelopable lands with streams, wetlands, or other constraints; and utility rights of way.

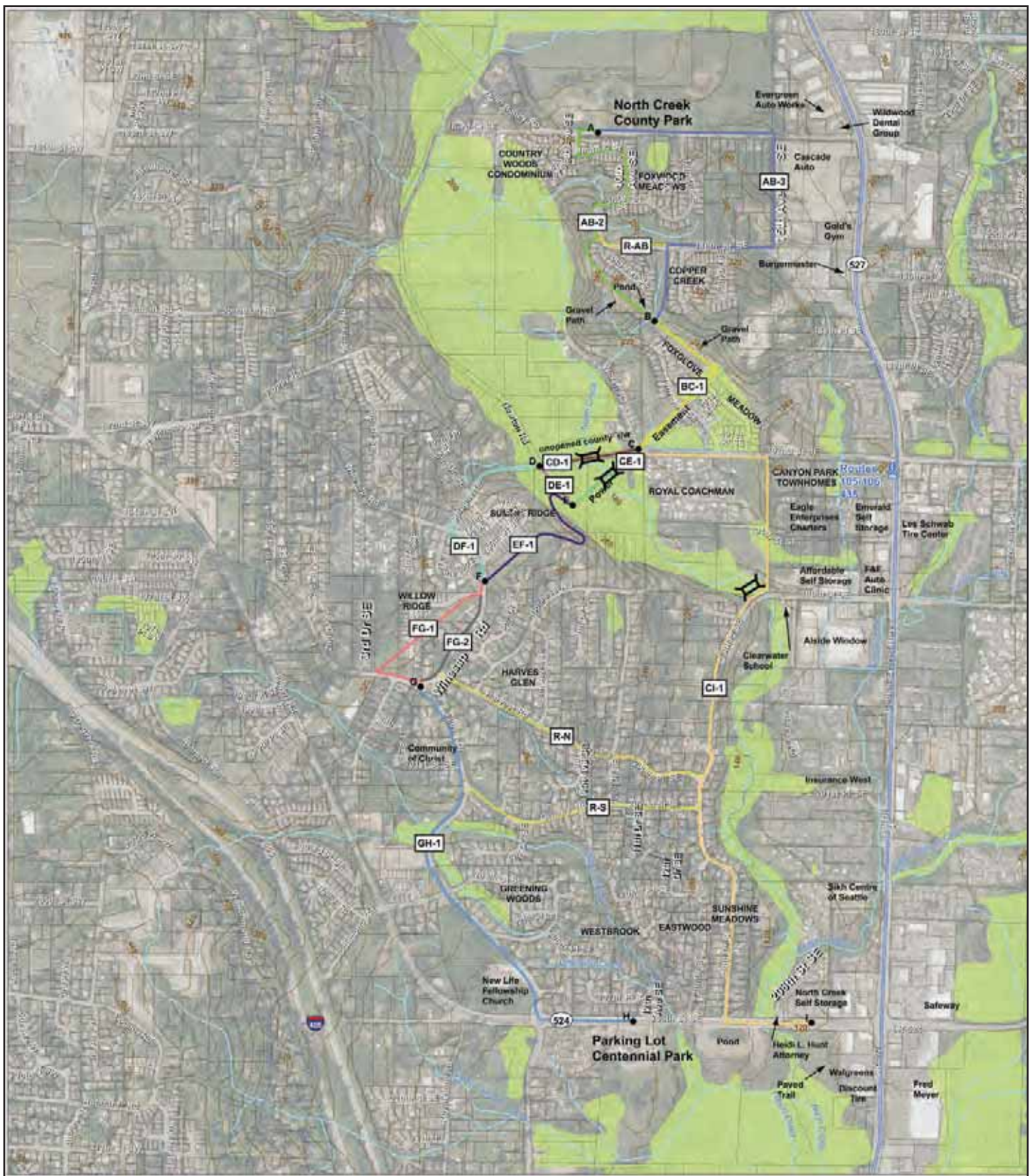
Within the North Creek Trail study area, the primary undeveloped corridor is associated with North Creek. However, much of this undeveloped area is within the regulated stream buffer, numerous wetlands occur within the undeveloped corridor, and the 100-year floodplain encompasses much of this corridor. Snohomish County determined that, while it may be acceptable for a trail to cross this corridor, the ecological impacts that would result from routing a trail continuously through this undeveloped corridor and adjacent to the creek would not be acceptable. Therefore, this alternative alignment was not brought forward for further evaluation.

A Seattle City Light transmission line runs southwesterly to northeasterly through the study area but does not connect to the project termini. Seattle City Light does not own all of the properties in which the transmission line is routed. However, portions of this corridor are included as alternative alignments.

A Snohomish County Public Utility District (PUD) transmission line runs southeasterly to northwesterly through the northern portion of the study area. This corridor does not connect to the project termini. Snohomish County PUD does not own all of the properties in which the transmission line is routed. However, one portion of this corridor was included as an alternative alignment.

In the absence of other undeveloped rights of way, roads and open space were identified where the proposed trail could be located.

The alternative alignments under consideration are shown in Figure 8. To facilitate comparison and discussion, the alignments were separated into small trail segments and named by logical breakpoints along the route. A summary of the configuration proposed for each trail segment is shown in Table 1. A detailed narrative description of each segment and associated field observations are documented in Appendix A.



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- Bus Route
- Alignment Breaks
- Parcels
- 20' Contour

Figure 8
North Creek Trail Preliminary Alternatives
(From SR 524 to North Creek County Park)

Table 1. Proposed Trail Configurations for each Trail Segment¹

Trail Segment Designation	Proposed Configuration	Route Description
AB-2	Sidepath on North Side Sidepath on East Side Bike Lanes and Sidewalks Sidepath on West Side Separated Trail	From North Creek Park entrance to 9th Avenue SE From 183rd Street SE to 183rd Place SE From 9th Avenue SE to 9th Drive SE From 185th Street SE to 186th Street SE From 9th Avenue SE, behind houses to point B
AB-3	Sidepath on North Side Sidepath on East and North Separated Trail	From North Creek Park entrance to 15th Avenue SE (private road) From 183rd Street SE to open space Through open space to PUD easement (Point B)
R-AB	Sidepath on North Side	From 9th Avenue SE to open space
BC-1	Separated Trail	From Point B to 192nd Street SE
CD-1	Separated Trail (boardwalk through wetlands/floodplain)	From 192nd Street SE to Point D (Newton Road unopened right of way)
CE-1	Separated Trail (boardwalk through wetlands/floodplain)	From 192nd Street SE to Point E
DE-1	Separated Trail	From Point D to Point E
DF-1	Separated Trail Sidepath on South Side and then the West or East Side	From Point D to north end of Sprague Drive From north end of Sprague Drive to Point F (on Winesap Road)
EF-1	Separated Trail	From Point E to Point F
FG-1	Separated Trail Sidepath on East Side	From Point F along power easement to Filbert Drive From power easement on Filbert Drive to Point G
FG-2	Sidepath on West Side	From Point F along Winesap Road to Filbert Drive
GH-1	Sidepath on West Side	From Winesap Road to SR 524
CI-1	Sidepath on South Side Separated Trail Sidepath on West Side Bike Lanes and Sidewalks	From Point C, along 192nd Street SE to east end of Foxglove Meadows From 192nd Street SE to 196th Street SE From 196th Street SE through gated property (Mills property) From gated property to SR 524
R-N	Bike Lanes and Sidewalks	From Winesap Road to 13th Place SE
R-S	Bike Lanes and Sidewalks	From Filbert Drive to 14th Drive SE

¹ To be used with Figure 8

5. PUBLIC INVOLVEMENT

After identifying the alternative alignments, Snohomish County held three open houses in June 2010 for the public to provide input to the process. The primary objectives of the open houses were to:

- Inform the public about the project, which included showing the alternative alignments under consideration, displaying photographs and illustrations depicting what a regional trail can look like, and providing potential criteria that may be used to evaluate the alternative alignments.
- Provide opportunities for people to speak one-on-one with staff, ask questions, provide comments, and sign up for future project updates.

The majority of attendees live in the project area. Based on the comments received, people felt the three most important criteria were connections to other bikeable/walkable areas, fit with the neighborhood, and safety.

As the process evolved and analyses were refined, three additional open houses were held in March 2011, and one additional open house was held in November 2011. The purpose of these followup meetings was to share new information and ideas. For example, through the evaluation process, alternative configurations were considered for some of the trail segments and new segments were introduced. A summary of the public comments received is provided in Appendix B.

6. EVALUATION CRITERIA

After considering public input, a set of evaluation criteria were finalized that reflected Snohomish County priorities, including the input gathered from the public open house meetings in June 2010. The criteria were intended to provide a basis for evaluating the different alignments, as well as one of the tools for selecting a preferred alignment. The following criteria were identified:

Safety

Safety is paramount. Factors considered included stopping sight distance, traffic volumes, and speeds on adjacent roads when determining the appropriate trail configuration (i.e., separated trail, sidepath, bike lanes and sidewalks, or elevated boardwalk).

In evaluating safety for each alternative alignment, the focus was on the potential for conflicts between trail users and vehicles. A preferred trail route would be an alignment in an exclusive right of way with minimal or no vehicular conflicts.

Neighborhood Compatibility

The proposed trail facility is more likely to fit in the neighborhood if a similar non-motorized facility already exists. When determining the appropriate trail configuration, continuity and compatibility were considered. For example, if there is an existing gravel path established in the identified corridor, the proposal is to widen and pave the separated trail. If intermittent sidewalks already exist, the proposal is to complete the sidewalk connection and add bike lanes.

In evaluating neighborhood compatibility, the potential effects on neighborhood character were considered. A preferred trail route would preserve residential yards and landscaping and avoid proximity to homes.

Sensitive Area Impacts

According to Snohomish County Code, sensitive areas include wetlands, streams, floodplains, and steep slopes. In applying this criterion, the focus was only on the wetland, stream, and associated buffer impacts due to the new trail construction. The implications of floodplains and steep slopes were captured in evaluating potential construction cost. The objective is to minimize effects on the wetlands, streams, and buffers while creating a safe and enjoyable trail facility meeting the needs of a regional trail. By including this criterion, these tradeoffs were considered during evaluation of the alternative alignments.

Trail Visibility

Trail users often do not feel secure when the trail is in an isolated corridor with dense vegetation and no visibility from the road or adjacent communities. The preferred trail alignment would be located in a well-traveled area with full visibility from roadway or adjacent land use, such as residential or commercial properties, and give the highest sense of security for the users.

Public Acceptance

The proposed trail facility is intended to provide an alternative travel mode to motorized travel for both the regional users as well as the local users. The route with the least public opposition and most public support would rank high in this category. Public support was evaluated based on the public comments received through open houses, e-mail communication, and conversations with some major stakeholders and groups.

Type of Trail

Four trail configurations were in consideration: separated trail, sidepath, bike lanes and sidewalks, and elevated boardwalk. The multi-use, separated trail or boardwalk in exclusive right of way is always the best choice and would rank the highest. The second tier would be an off-road sidepath within roadway corridors. These trail configurations meet the regional trail guidelines. Bike lanes and sidewalks can be the most appropriate type of trail in some circumstances, but fail to meet regional trail guidelines (see Section 3).

Construction Cost

The cost to construct trails can vary greatly, depending on factors such as the requirement for structures (e.g., culverts, bridges, boardwalks, retaining walls) or right of way acquisition. Planning level Opinions of Costs allow for comparing costs among the alternative alignments. The objective is to minimize cost while meeting other evaluation criteria. By including cost as a criterion the tradeoffs were considered.

Right of Way Impacts

Right of way requirements affect project cost and schedule as well as public acceptance. The preferred alternative alignment would be located in a dedicated right of way or easement and avoid or minimize the amount of right of way acquisitions required.

User Experience

A positive trail experience involves good views and experience of natural areas, such as forested, wetland, stream, and landscaped areas. User experience is enhanced by separation from traffic, perceived safety, clear wayfinding, and amenities such as resting areas, viewpoints, or interpretive displays.

7. EVALUATION SUMMARY

The results of the evaluation are summarized below for each criterion. This summary refers to the trail segment designations shown on Figure 8.

Safety

The frequency of trail crossings with either driveways or roadways were examined and evaluated based on field visits and aerial photographs. While treatments can be designed for the intersection of trails with road and driveway to improve safety, higher frequency crossings typically mean higher potential for conflicts between trail users and vehicles.

The lowest score means that the alternative alignment traverses densely developed neighborhoods with a higher frequency of crossings (for example, 10 or more driveway/road crossings in a quarter mile of trail). Trail Segments AB-2, R-N, R-S, and CI-1 would traverse through developed neighborhoods with closely spaced driveways. Where bike lanes and sidewalks are proposed along Segment CI-1, there could be more conflicts between trail users and vehicles using on-street parking. Although the study area terminates north of SR 524, selection of Segment CI-1 would require a new signalized crossing of SR 524, which is a major five-lane, high-volume arterial.

The medium score indicates that there are some crossings but not as many as described above. Trail Segments DF-1, FG-2, and GH-1 would cross some local streets and driveways; however, the frequency of these crossings is more typically 5 to 10 crossings in a quarter mile. Users would be able to travel continuously for a reasonable distance before encountering a crossing. There could be a short distance for these alternatives to have more closely spaced driveway crossings, but users would need to be on the alert for frequent driveways. Because these crossings are mostly driveways, which would have low vehicular volume, the conflicts between trail users and vehicles would be relatively low. On average, these alternatives would provide a relatively long stretch of uninterrupted travel.

A higher score means that the alignment alternative is traversing through areas with no driveway or minimal driveway and road crossings (less than five crossings in a quarter mile). The alternatives with an exclusive right of way such as a power line easement, through open space, or undeveloped properties would have the least conflicts and crossings. These alignments included Trail Segments R-AB, AB-3, BC-1, CD-1, CE-1, DE-1, EF-1, and FG-1.

Neighborhood Compatibility

Neighborhood compatibility was evaluated based on site visits and aerial maps.

The lowest score means the alternative alignment has the potential for considerable impact on the neighborhood characteristics and aesthetics. For example, the alternative alignment eliminates a substantial portion of an existing yard, clears a large number of mature trees, or comes close to structures. None of the alternative alignments received this score because the type of trail facility (i.e., separated trail, sidepath, bike lanes and sidewalks, or elevated boardwalk) was carefully considered for each segment to avoid these types of impacts.

The medium score was applied to eight of the alternative alignments as follows:

- There are continuous existing sidewalks for the north part of Trail Segment AB-2 and intermittent sidewalk sections along Trail Segments R-N and R-S, as well as the south part of Trail Segment CI-1 along 14th Drive SE. The proposed trail would enhance the existing facilities and stripe and sign bike lane facilities. Some existing landscaping, front yard improvements, and parking might be affected.
- Trail Segment AB-3 is currently less developed, so a trail would be a relatively new feature in the neighborhood. However, this segment would not affect buildings and mature landscaping such as significant trees.
- Trail Segments DF-1, FG-2, and GH-1 would have minimal effects on the neighborhood characteristics, but in some areas adjacent homes are within 50 feet of the proposed trail.

Seven alternative alignments received the highest score as follows:

- Trail Segment BC-1 has an existing gravel path in the neighborhood. The proposal is to enhance the gravel path by paving and widening it.
- Trail Segments CD-1, CE-1, DE-1, and EF-1 would cross one of the most diverse natural environments where users can enjoy the scenery. These alternative alignments would not run through developed neighborhoods.
- While Trail Segments R-AB and FG-1 would introduce a trail where non-motorized facilities do not exist today; for the most part, these alternative alignments would cross relatively open areas with no impacts on any screening landscape and no proximity to any building structures. Minimal impacts would occur to the front yards of a couple properties along Filbert Drive, but landscaping and front yard restoration can be included in the trail design process.

Sensitive Area Impacts

Sensitive areas in the vicinity of the alternative alignments were identified based on existing inventories and supplemented with field observations. Although these sensitive areas have not been formally delineated, the estimated areas were mapped and overlaid on the alternative alignments. The footprints for the alternative alignments assumed retaining walls or elevated structures would be proposed to minimize the impacts. The associated costs of these structures were factored into the construction cost criterion. Potential area impacts on wetlands and buffers, as well as linear impacts on stream channels, were estimated for each alternative alignment. The number of stream crossings per alignment was also calculated.

A lower score means that the sensitive area impacts are more severe, or the alignment may affect a high quality Native Growth Protection Area (NGPA). All alignments scoring the lowest for sensitive areas would likely directly affect high quality wetlands. Most of these alignments also would cross North Creek and/or its associated wetlands and floodplains. The results of the sensitive area impacts are as follows:

- Trail Segments CD-1, CE-1, and DF-1 would affect Category I wetlands, buffers, and stream channels, with two stream crossings each. For both CD-1 and CE-1, one of the two stream crossings is North Creek.
- Trail Segment CI-1 would affect a Category III wetland, buffers, and stream channels, with three stream crossings. One of the three stream crossings is North Creek. This segment would also affect an NGPA.
- Trail Segment EF-1 would affect Category I wetlands and buffers.
- Trail Segment DE-1 would affect Category I wetlands associated with North Creek.
- Trail Segment AB-3 would affect an NGPA for the Copper Creek development. The NGPA contains a wetland, stream, and associated buffers.

Most of the alignments that received a medium score for sensitive area impacts would either avoid or have minimal direct impacts on wetlands, although some would cross tributaries to North Creek. These alignments included Trail Segments AB-2, BC-1, GH-1, R-N, and R-S. On the other hand, Trail Segment FG-2 received a medium score for some direct wetland impacts, but no stream crossings.

The alignments receiving the highest score for sensitive area impacts were those that would best avoid or minimize the impacts. These included Trail Segments R-AB and FG-1.

Trail Visibility

In addition to the potential for conflicts between trail users and vehicles, visibility of the trail corridor from the roadways and adjacent communities is another safety factor. Trail visibility was evaluated based on site visits and aerial maps.

The lowest score means that the alternative alignment is in a densely forested area where visibility from the adjacent roadways or communities is low or does not exist. These alternatives included Trail Segments CE-1, CD-1, and DE-1.

A medium score means that some sections of the alternative alignment are in a well-traveled or open space, and other sections are in a less visible area from the road or neighborhoods. On average, the alternative would have some visibility from either roadways or adjacent land uses. These alignments included Trail Segments AB-3, BC-1, DF-1, EF-1, and FG-1.

The highest score was given to the alternative alignments in a well-traveled area, adjacent to roadways, or visible to residences or commercial businesses. These alignments included Trail Segments AB-2, R-AB, FG-2, GH-1, CI-1, R-N, and R-S.

Public Acceptance

The alternative alignment that received the most public comments (both positive and negative) was Trail Segment CI-1, along 13th Place SE and 14th Drive SE. Those who commented positively for this segment liked the directness of the route. Several also welcomed the trail as an amenity near the Clearwater School and Commons. However, almost twice as many negative comments were received compared to positive comments. Primary issues and concerns with the alignment included:

- Frequent high speeds of cars traveling along the adjacent roads;
- Landscaping that might be affected;
- Frequency of driveways and concerns about vehicles backing out across a trail;
- Poor sight distances in places; and
- Flooding and drainage issues.

In addition, this neighborhood expressed a high level of frustration with public projects after a recent sewer project was constructed through their neighborhood. Because of the outspoken opposition and in spite of some of the support, this segment received the lowest score for public acceptance.

A number of the alternative alignments received just a few comments, both of concern and support. These alignments received a medium score for public acceptance. For example, the alignments that would occur within utility rights of way (Trail Segments BC-1, CE-1, EF-1, and FG-1) were viewed with concern (see Appendix B), but also with favor. One person did not like Trail Segment CD-1 because it encroached on a green belt; thus, it received a medium score. Some people did not think Trail Segment AB-2 was good because of the limited space and potential loss of parking. Trail Segment AB-3 also received a medium score due to concerns about the narrow width of the private road (15th Avenue SE). Improving this road could require significant modification, with the potential to impair or prohibit ingress and egress to private property, and adversely affect private property, underground utilities, and safety. However, some of these concerns would be alleviated by locating the proposed sidepath to the east side of the private road.

Several alternative alignments (Trail Segments DF-1, FG-2, and GH-1) received only favorable comments. No comments were submitted for several trail segments (R-AB, DE-1, R-N, and R-S), which received the highest score for public acceptance.

Type of Trail

The proposed trail configuration (separated trail, sidepath, bike lanes, and sidewalks, or elevated boardwalk) was determined by the right of way available, connectivity to the existing non-motorized facility, vehicular conflicts, and corridor characteristics. The goal is to establish a system that meets the regional standard as much as possible.

The lowest score means that the alignment is exclusively bike lane and sidewalk or a mix of the three configurations. Alternative alignments that received the lowest score were Trail Segments AB-2, CI-1, R-N, and R-S. Although there were separated trail and sidepath configurations in some sections of the alignments, frequent switching of facility type makes the alignments more confusing to the trail users; thus, they are less safe and desirable for users. For example:

- Trail Segment AB-2 would begin with a sidepath configuration along 183rd Street SE, switch to bike lane and sidewalk through the Country Woods community, and then change to a separated trail configuration within a half mile of travel.

- Similarly, Trail Segment CI-1 would begin with a sidepath along 192nd Street SE, then switch to a separated trail through open space and the Clearwater property, change back to sidepath along 13th Place SE until the unopened, gated property at the north dead end of 13th Place SE, and then switch back to bike lane and sidewalk.

The medium score means that the alternative is exclusively sidepath or a mix of sidepath and separated trail, and the change of facility types is minimal. Alternative alignments that received the medium score were Trail Segments AB-3, DF-1, FG-1, R-AB, FG-2, and GH-1 as follows:

- Trail Segments AB-3, DF-1, and FG-1 would include a mix of sidepath and separated trail and would not change configuration frequently.
- Trail Segments R-AB, FG-2, and GH-1 would be exclusively sidepath along the entire lengths.

The highest score means that the entire alternative alignment is a separated trail or boardwalk in an exclusive right of way. These alignments included Trail Segments BC-1, CD-1, CE-1, DE-1, and EF-1.

Construction Cost

The planning level Opinion of Costs included in this study reflects the magnitudes and assumptions of the proposed improvements. Cost data are preliminary and for planning purposes only. No preliminary engineering has been performed. The Opinion of Costs is used to evaluate and compare trail route alternatives in consideration. These costs shall be refined based on preliminary engineering and ground survey when programming the budget for construction.

The Opinion of Costs was developed based on site observations, available geographic information system (GIS) data, available right of way information, cost data from trail projects with similar characteristics in the region, and Washington State Department of Transportation (WSDOT) Planning Level Cost Estimate software. Markup percentages for design, permitting, construction administration, and contingency were selected based on the WSDOT Cost Estimating Manual (WSDOT 2009).

For the discussion of construction costs, the cost per linear foot does not include engineering and permitting costs or right of way costs. While the Opinion of Costs includes potential mitigation cost, it should be noted that these preliminary estimates continue to be refined through further review. General assumptions and a summary of the Opinion of Costs are provided in Appendix C.

The lowest score means a high range of construction costs per linear foot as compared to other alignments in this study. The alternatives that received this score were Trail Segments CD-1, CE-1, DE-1, DF-1, EF-1, and GH-1. Construction cost per linear foot is above \$500. The higher costs would be due to extensive retaining walls, bridge structure, elevated trail structure due to topography, and the objective of minimizing effects on wetlands and streams. Additional information is as follows:

- Both Trail Segments CD-1 and CE-1 would cross North Creek and traverse through wetland areas that require an elevated structure to minimize impacts. A portion of Trail Segment CE-1 has been filled by previous sewer projects; therefore, the costs would be less compared to Trail Segment CD-1.
- Trail Segment DE-1 would traverse entirely through wetland areas.
- The north half of Trail Segment EF-1 would traverse a significant slope with approximately a 100-foot elevation dropoff from top to bottom. Switchbacks with

landings and retaining walls would be required to accommodate the slope at a trail profile that meets Americans with Disabilities Act (ADA) requirements (5 percent or less, or 8.3 percent with landings for a short distance; ideally, less than 30 percent of the corridor length). The south portion of Trail Segment EF-1 would traverse on a relatively flat power line easement behind some private residences.

- Trail Segment GH-1 would have some cut and fill retaining walls and sensitive area mitigation costs. Comparatively, its construction costs per linear foot would be on the low end of this range.

The medium score means a medium range of costs per linear foot. The alternatives that received this score might include some retaining walls, short segments of elevated structures, signals, planter landscaping, some grading work, and minor crossing improvements. Construction cost per linear foot would range from \$200 to \$500. These alternatives included Trail Segments AB-2, R-AB, BC-1, FG-2, R-N, R-S, and CI-1.

The highest score means a low range of costs per linear foot. The alignment mostly runs through a relatively flat area with minimal grading and retaining walls. Construction cost per linear foot is in the range of less than \$200. These alternatives included Trail Segments AB-3 and FG-1.

Right of Way Impacts

Potential right of way acquisition needs were estimated based on the type of trail recommended, Snohomish County assessor maps, GIS property line database, and aerial maps. The additional right of way width needed was estimated to vary from 5 to 30 feet, depending on site-specific conditions. No buildings would be affected by the proposed trail. General assumptions and estimates are documented in Appendix C.

Right of way costs per segment were estimated based on the assessed land value and potential administrative costs. The right of way costs also included the purchase of land for critical area mitigation. Built improvements, landscaping, or other factors that affect the true market value were not assessed at this stage.

The lowest score means the alternative requires a significant amount of new right of way in terms of monetary value. The range could be \$500,000 or above. These alternatives included Trail Segments AB-3, EF-1, and CI-1 as follows:

- Trail Segment AB-3 would traverse through commercial property, south of 183rd Street SE, with a higher land value than other alternatives.
- Half of Trail Segment EF-1 would be located within a power line easement and a similar situation to that mentioned above might be applicable. Additional right of way would be required for accommodating the switchbacks down the steep slopes.
- The majority of Trail Segment CI-1 right of way acquisition would occur north of the gated property (or dead end of 13th Place SE). The alignment would traverse a number of large, residential parcels.

The medium score means that the alternative requires some new right of way but the monetary value ranges from \$25,000 to \$500,000. These alternatives included Trail Segments AB-2, R-AB, BC-1, CD-1, CE-1, DE-1, DF-1, FG-1, FG-2, GH-1, R-N, and R-S as follows:

- Trail Segments AB-2, R-AB, FG-2, GH-1, R-N, and R-S mostly would traverse through subdivisions with relatively small lots. Yet, the acquisition values would increase with the length of the trail alignment.

- Trail Segments BC-1, CE-1, and FG-1 would traverse within existing power line easements. It is unknown at this point whether right of way acquisition costs would be required. Conservatively, values were estimated based on the estimated trail footprint and the land value costs of the private properties granting the easements.
- The majority of the right of way costs for Trail Segments CD-1, DE-1, DF-1, and FG-1 would be purchase of land for critical area mitigation. Trail Segment CD-1 and a portion of DF-1 would be within an undeveloped public right of way.

The highest score means the alternative requires no or minimal right of way; typically, the monetary value is less than \$25,000. No trail segments are in this category.

User Experience

The lowest score means that the alternative alignment includes no view of natural areas in an urban setting and is not traversing any wetlands, streams, or forested areas. It could mean, however, the alternative alignment is immediately adjacent to houses and roadways with more potential for conflicts with vehicles. These alternatives included Trail Segments FG-2, R-N, and R-S.

The medium score means that the alternative alignment includes some views of forested areas but does not run through wetlands or streams. For alternatives that have portions of segments adjacent to urban land uses and through open space, they were also rated as a medium score. These alternatives included Trail Segments AB-2, R-AB, AB-3, DF-1, EF-1, FG-1, GH-1, and CI-1.

The highest score means that the alternative alignment offers a good view of natural areas and provides an experience of wetlands, streams, and forested areas. These alternatives included Trail Segments BC-1, CD-1, CE-1, and DE-1.

Summary

Table 2 summarizes the rating for each criterion by alignment alternative.

8. INTERPRETATION OF RESULTS

Based on the preliminary evaluation, the alignment that scored the highest consisted of Trail Segments AB-3, BC-1, CE-1, EF-1, FG-1, and GH-1. However, there were a number of limitations on the evaluation approach as follows:

- The criteria were not weighted, so all criteria were equal. For example, safety did not carry more weight than user experience.
- There were tradeoffs between benefits and concerns associated with individual segments. For example, some segments showed good user experience, but also had associated ecological impacts. Others offered a more direct trail alignment, but might not accommodate a trail developed to preferred regional trail standards. These tradeoffs are clear when reviewing the evaluation matrix, but are lost when comparing total scores.
- With the simple 3-point scoring system, substantial differences between alternatives are not apparent. For example, the alignment that scored the highest has far greater ecological impacts and construction cost, compared to other alignments with the same score.

Screening Criteria							Construction Cost (Relative to other Segments)
Screening Criteria	Rating Scores	Safety	Neighborhood Compatibility	Sensitive Area Impacts	Trail Visibility	Public Acceptance	Type of Trail
Definitions of Rating Criteria	3	No/minimal driveway/road crossing	Neighborhood has similar existing trail facility	No/minimal impacts on wetlands and streams, and buffers	In well-traveled area; full visibility from roadway or community	Public supports the segment or has no concern	Separated trail; meets regional trail standard
	2	Infrequent driveway/road crossings	New type of trail facility with no or minimal impacts on neighborhood characteristics	Some impacts on wetlands and streams, and buffers	In remote but open space area; some visibility from roadway or community	Some public concerns about the segment	Off-road sidepath; meets regional trail standard
	1	Frequent driveway/road crossings	New type of trail facility with significant impacts on neighborhood characteristics	Significant impacts on wetlands and streams, and buffers	In remote, wooded area; no visibility from roadway or community	Strong public opposition to the segment; unwilling sellers	Bikes and sidewalks; does not meet regional trail standard
Total							
17		1	2	2	3	2	1
23		3	3	3	3	3	2
18		3	2	1	2	2	2
22		3	3	2	2	2	3
							2
19		3	3	1	1	2	3
19		3	3	1	1	2	3
20		3	3	1	1	3	3
17		2	2	1	2	3	2
18		3	3	1	2	2	3
22		3	3	3	2	2	3
19		2	2	2	3	3	2
19		2	2	2	3	3	2
14		1	2	1	3	1	1
17		1	2	2	3	3	1
17		1	2	2	3	3	1

- The segments were not all the same length. For some of the longer segments (e.g., Trail Segment CI-1), it was difficult to apply criteria consistently because conditions along the corridor are not homogenous. For example, the north end of Trail Segment CI-1 where the trail would serve the North Creek School and proposed Clearwater Commons Low Impact Development was received very favorably by adjacent property owners and would meet regional trail standards. On the other hand, the south end was poorly received and did not meet regional trail standards.
- The scoring did not consider changes that could be made to some of the scenarios that would improve scores. For example, the score for Trail Segment CI-1 could slightly improve by developing a more innovative, urban improvement that is a benefit to the neighborhood.
- The ecological ratings were based on a very cursory literature review and “windshield” survey, rather than more intensive field reconnaissance.

Because of these limitations, additional analyses were appropriate. The following sections describe refinements to what is described as the North Alignment (from North Creek Park to 192nd Street SE), and additional comparisons of options for a West Alignment with an East Alignment (from 192nd Street SE to SR 524).

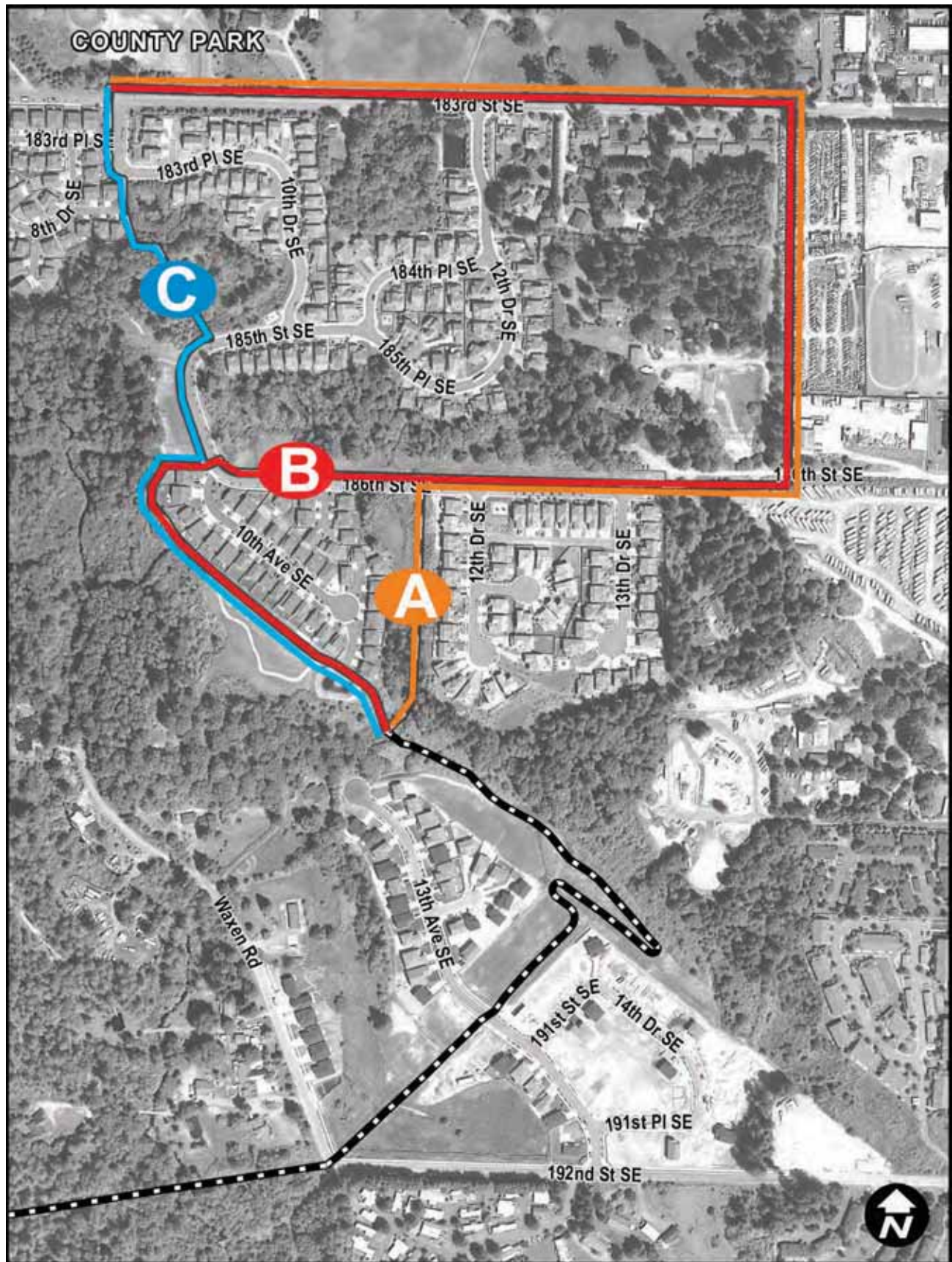
9. NORTH ALIGNMENT

The North Alignment extends from North Creek Park south to 192nd Street SE. Based on the preliminary analysis, the preferred alignment in this area would be Trail Segments AB-3 and BC-1. However, this alignment scored only 1 point higher than an alignment that would include Trail Segments AB-2 and BC-1. The key difference is that an alignment along Trail Segments AB-3 and BC-1 would cross fewer driveways and meet regional trail standards—both key safety considerations.

The remaining concern with an alignment along Trail Segments AB-3 and BC-1 was the potential ecological impact. Given the cursory nature of the preliminary review, a more intensive reconnaissance was warranted before finalizing a preferred alignment. Snohomish County biologists walked the alignment, focusing on the Copper Creek NGPA west of 12th Drive SE. Biologists found that this NGPA includes a wetland, a stream, and associated buffer, which are considered valuable resources. This area provides important functions including wildlife habitat, water quality maintenance, and protection from flooding and stream erosion.

Because of these potential impacts, several additional alignment options were evaluated and presented for public comment (Figure 9). The three alignment options all follow Trail Segment BC-1, but differ to the north. Table 3 summarizes the North Alignment options. The three options were:

- Option A: This option was Trail Segment AB-3, as analyzed in the preliminary evaluation. The construction cost was updated to include the use of an elevated structure to minimize impacts through the high quality NGPA.
- Option B: This option was the same as Option A except that, rather than turning south through the Copper Creek NGPA, it continued west across 186th Street SE and behind the homes along the west side of 10th Avenue SE.
- Option C: This option was similar to Trail Segment AB-2 but, rather than following 183rd Place SE and 10th Drive SE, it skirts the western edge of a stormwater pond and cuts through another NGPA.



Parametrix 554-3101-001 1600 01 1/12 (S)

Figure 9
Three Options for North Alignment

Table 3. Comparison of North Alignment Options

Key Differences	Option A	Option B	Option C
Length	4,400 feet	5,300 feet	2,700 feet
Total Cost ¹	~\$4.8 million	~\$3.2 million	~\$3.8 million
Cost per Lineal Foot ¹	~\$1,100	~\$600	~\$1,375
Ecological Impacts	1/10-acre wetland 3/4acre buffer	<1/10-acre wetland 1/3-acre buffer	No wetland impact 1/4acre buffer
Intersections with Road and Driveways	~6	~6	~2
Terrain, Surrounding Environment	Separated from road A portion between homes Through NGPA Relatively flat	Separated from road Across road from homes Through open space Relatively flat	Separated from road Away from homes Through NGPA and open space Gentle hills

¹ 2011 planning-level Opinion of Cost. The total cost includes not just construction but design and environmental.

Based on these additional analyses and associated public outreach (Section 5), Option C was identified as the preferred North Alignment because it offers the most direct connection with the least ecological impact and the fewest road and driveway crossings. This alignment was most favored based on public comments.

10. EAST AND WEST ALIGNMENTS

South of 192nd Street SE, it was decided to further compare the cost, geotechnical conditions, and ecological impacts of two options for the West Alignment, one of which was the alignment that scored the highest in the preliminary evaluation but may have substantially higher cost and ecological impacts. The objective of this additional analysis was to facilitate the selection of a West Alignment to further compare with an East Alignment.

The two options for the West Alignment were:

- Option 1 (Trail Segments CD-1, DF-1, FG-1, and GH-1); and
- Option 2 (Trail Segments CE-1, EF-1, FG-1, and GH-1).

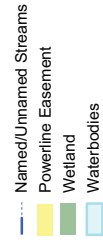
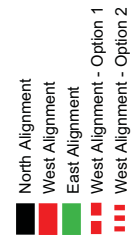
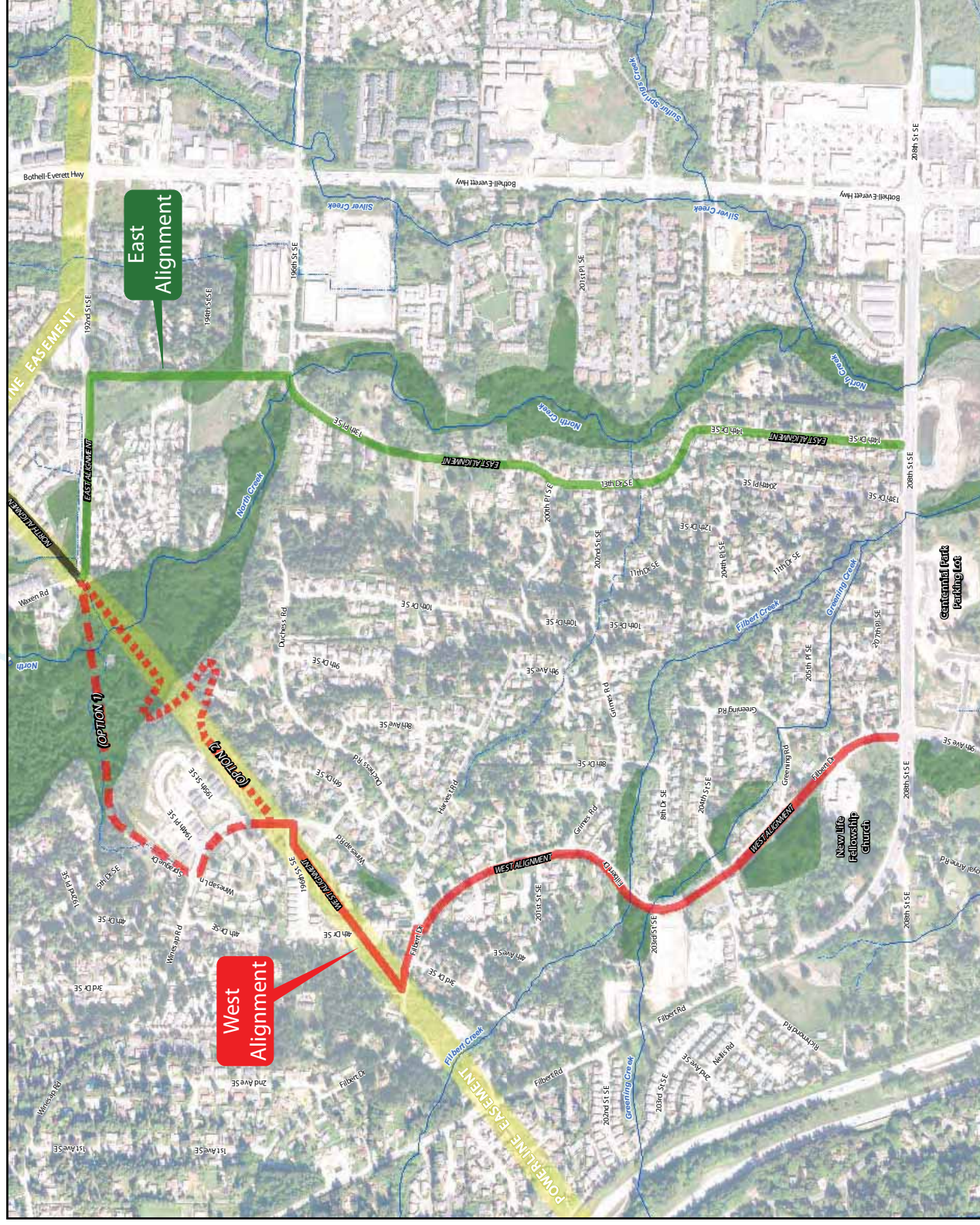
The East Alignment consists of Trail Segment CI-1. It was decided to consider more innovative improvements for the southern portion of Segment CI-1, which could better fit with and even enhance the neighborhood.

The two options for the West Alignment and the East Alignment are shown on Figure 10.

Options for the West Alignment

Additional Cost Analysis

An engineer with Snohomish County provided separate preliminary cost estimates for the two alternative routes for the West Alignment (Smith 2010). Option 1 and Option 2 traverse an area with relatively steep grades. The goal of these additional estimates was to provide a planning-level cost comparison of ADA-compliant trail alternatives. The analysis concluded that Option 2 would cost approximately \$700,000 more than Option 1. The costs presented in Appendix C do not include the results of this additional analysis.



Additional Geotechnical Analysis

In December 2010, a geotechnical engineer with Snohomish County took a closer look at the existing slopes along the West Alignment for Option 1 and Option 2. Soils in the area appeared to be subject to surficial movement. Of the two options, Option 1 was preferable from a geotechnical perspective because the trail could be located on an existing drainage cut with a slope that would be relatively gradual.

Ecological Analysis

The potential ecological effects of the East Alignment and the two options for the West Alignment were further evaluated by Snohomish County biologists (Smith 2011). The evaluation was based on site visits conducted between 2008 and 2011, meetings with the project manager, and the draft alternatives analysis (presented in Sections 1 through 8). In the evaluation, potential impacts on wetlands, buffers, and streams were quantified, as well as resulting mitigation cost. The results of the evaluation are shown in Table 4.

Table 4. Summary of Ecological Effects

Alignment	Wetland Impacts (acres)	Buffer Impacts (acres)	Number of Stream Crossings	Stream Impact (linear feet)
West (Option 1)	0.84	1.96	9	634
West (Option 2)	1.81	5.12	6	324

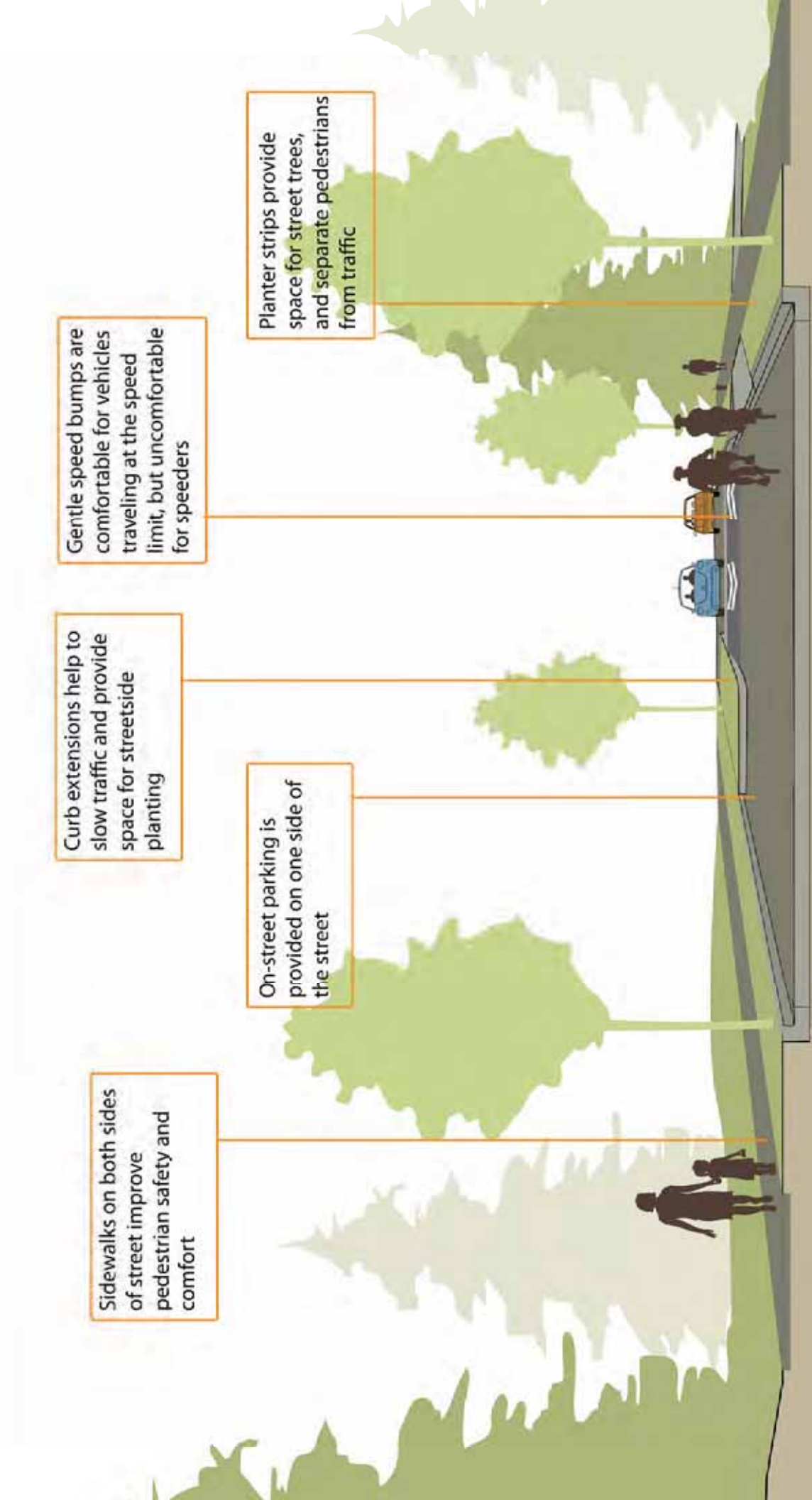
Based on the higher cost, geotechnical considerations, and higher ecological impacts, Option 2 for the West Alignment was eliminated.

Design Refinement of the East Alignment

It was determined that many of the comments and concerns identified in Section 7 regarding the southern end of Trail Segment CI-1 could potentially be addressed through an innovative design that would enhance the entire streetscape through traffic calming, pedestrian safety, and aesthetics. In January 2011, an internal design charrette process developed concepts for the East Alignment and identified a proposed configuration.

The new configuration proposed a shared roadway (bicycles and vehicles would share a travel lane) with sidewalks for pedestrians and other types of trail users (Figure 11). This layout would require less width to accommodate non-motorized facilities when compared to bike lanes and sidewalks. This approach to accommodating bicycles would also reduce the potential conflicts with cyclists as residents back out of driveways. Traffic calming features included a narrower roadway, gentle speed bumps, and curb extensions. Together, these design treatments would reduce vehicle speeds and improve safety for both bicyclists and motor vehicles.

On-street parking was included in the design, with curb extensions to define parking areas. Planter strips, located between the sidewalk and the roadway and on the curb extensions, would improve the aesthetics of the corridor. Drainage improvements and roadway resurfacing would also be included in this configuration. Overall, this design option focused on developing a great neighborhood street rather than a trail facility. Trail users would be provided with a safer route connecting to the regional trail, and residents would benefit from safety, aesthetic, and engineering improvements to their neighborhood.



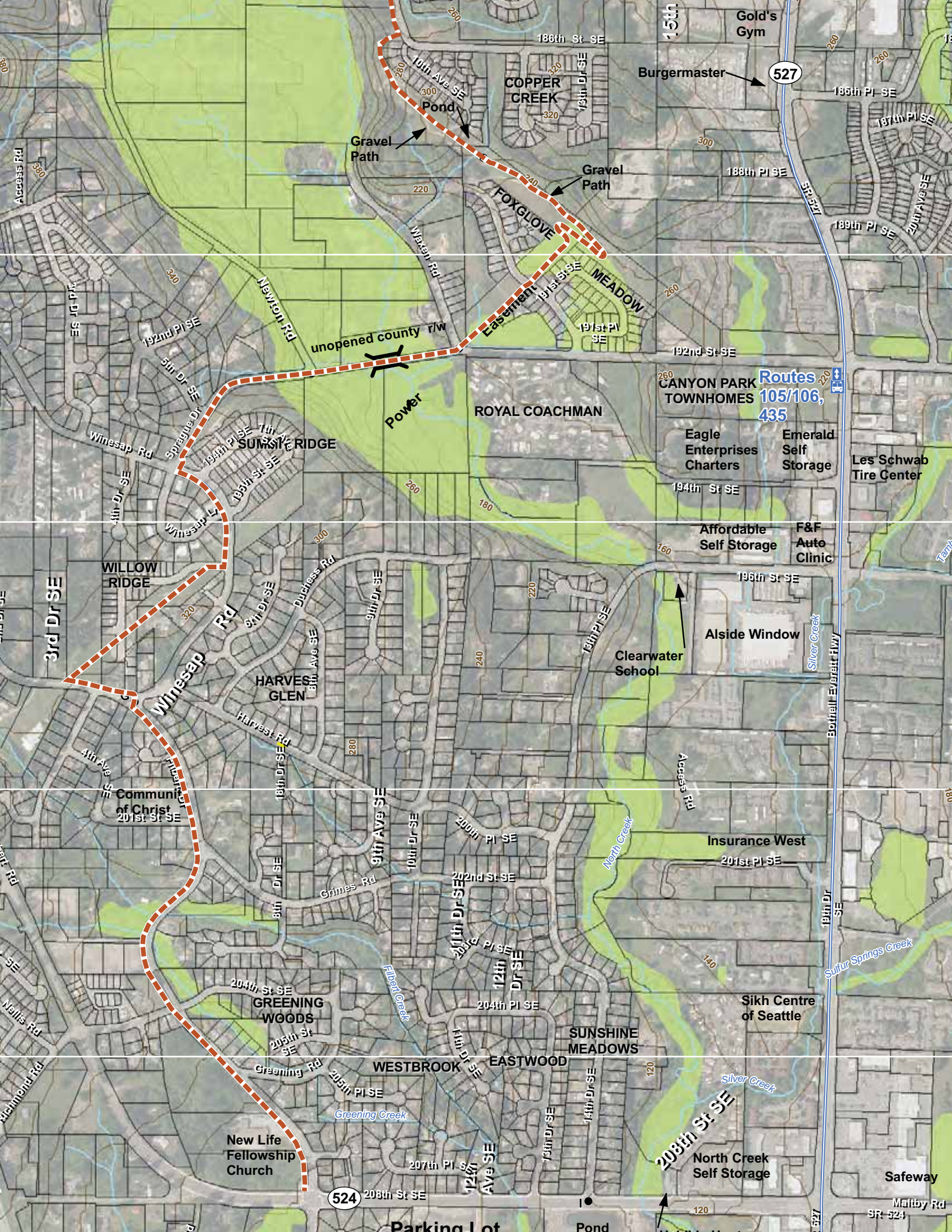
Where the trail crosses North Creek at 196th Street SE, connections to North Creek School and the proposed Clearwater Commons Low Impact Development would be incorporated to the greatest extent possible.

11. CONCLUSION

The preliminary design, right of way plans, and environmental review for the North and West Alignments will move forward. These alignments are preferred for the following reasons:

1. These alignments are representative of a WSDOT standard for a shared use path (i.e., multi-use trail).
2. The configurations applied to these alignments are more consistent with the regional facilities to which the trail is connecting.
3. These alignments are safer because the trail does not cross as many driveways and are more removed from traffic.
4. These alignments cross SR 524 at a logical location that is signalized; moreover, it is farther from conflicts with SR 527.
5. These alignments are separated from the road by a buffer, and mostly front large lots or developments that do not have driveways crossing the trail.
6. The type of users on a multi-use trail could include walkers, walkers with strollers, runners, biking families, roller bladers, and skate boarders.
7. Even though the West Alignment affects more wetlands and streams, many of the effects would be minimized through design, and compensatory mitigation would be required. It also offers opportunity for the public to enjoy these areas.
8. Public acceptance for the West Alignment is three times more favorable than the East Alignment. The 13th/14th Avenue neighborhood continues to strongly oppose the East Alignment.
9. These alignments overall would offer a better user experience by separating users from traffic and offering more natural experiences.
10. The West Alignment may offer better opportunities for additional, future connections to other bicycle corridors (i.e., North Road) and the Interurban Trail to the west via potential east-west trail corridors (i.e., Three Creeks Trail).
11. These alignments meet the objective of a regional trail connector and the definition of a multi-use segment in accordance with Appendix B of the Brightwater Settlement Agreement.

The preferred alignments are depicted in Figure 12.



12. REFERENCES

- Smith, A. 2010. Memorandum to Andy Smith, Snohomish County, from Brian Larmore, Snohomish County, regarding North Creek Trail Alternative Route Estimates. December 2, 2010.
- Smith, A. 2011. Memorandum to Andy Smith, Snohomish County, from Stephanie Cotton, Snohomish County, regarding RC1546 North Creek Trail Acquisition—Revised Preliminary Environmental Review. July 2011.
- WSDOT (Washington State Department of Transportation). 2009. Cost Estimating Manual for WSDOT Projects—M 3034.02. Environmental and Engineering Programs, Strategic Analysis and Estimating Office, Olympia, WA. July 2009.

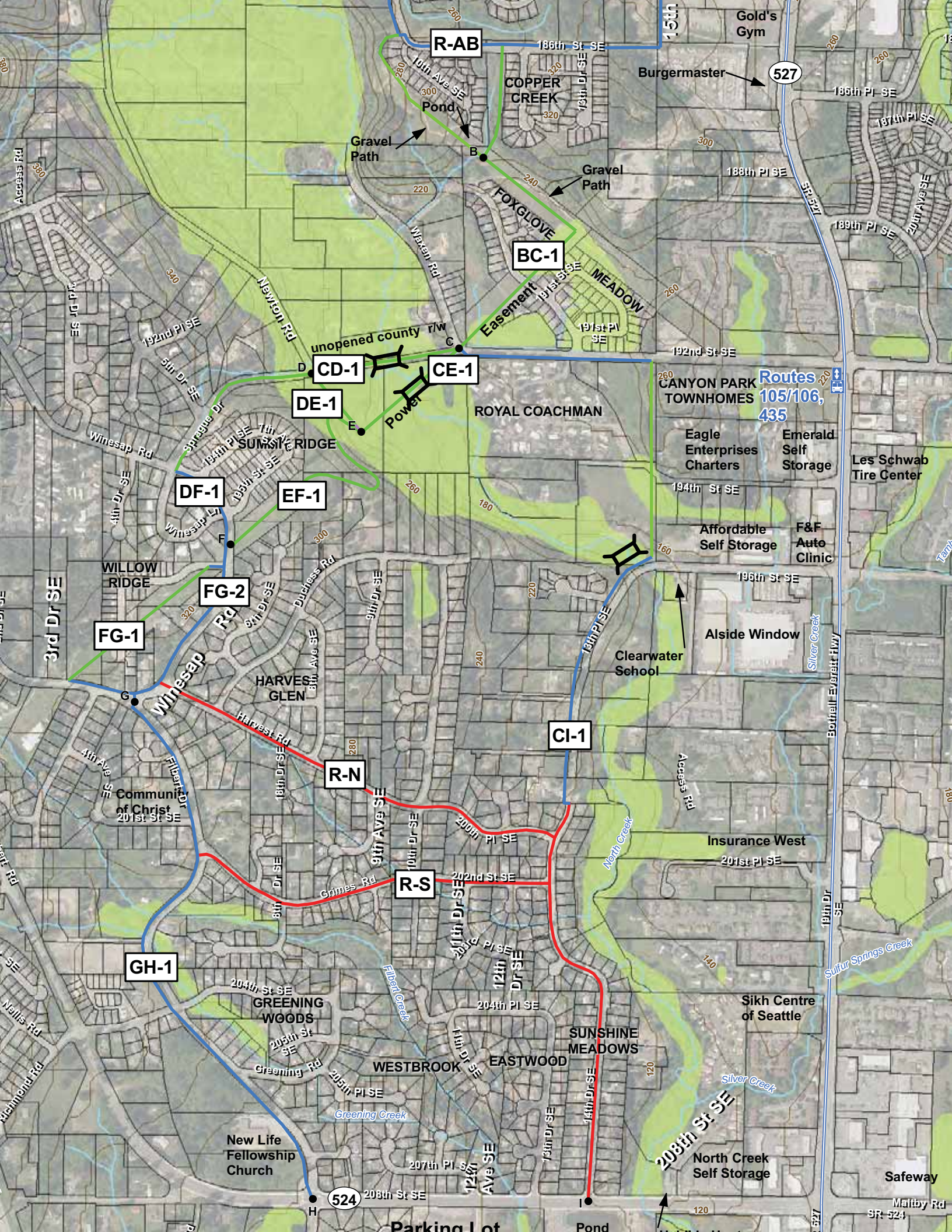
APPENDIX A

Detailed Descriptions of Alternative Segments

Overview

This appendix describes the proposed trail configuration and alignment in the context of existing conditions for each segment. It is divided into two sections:

- Section A-1 describes the trail segments included in the original evaluation, as described in Section 4 of the report. Figure A-1 depicts the alignments by trail configuration: separated trail, sidepath, bike lanes and sidewalk, or elevated boardwalk.
- Section A-2 describes the three options for the North Alignment that were included in the subsequent evaluation, as described in Section 9 of the report.



SECTION A-1

Preliminary Alternatives

183rd Street SE to 192nd Street SE

This area consists of the following alternative alignments:

Trail Segment AB-2

This segment would connect North Creek County Park to Point B. This segment would run along the north side of 183rd Street SE in the public right-of-way with a sidepath configuration from the North Creek Park entrance to 9th Avenue SE. After crossing 183rd Street SE at 9th Avenue SE/183rd Street SE intersection, the configuration would become a sidepath on the east side of 9th Avenue SE until it reaches 183rd Place SE (see Photograph 1), where it would become a bike lane and sidewalk configuration, running adjacent to the local roads within Foxwood Meadows community (via 9th Avenue SE, 183rd Place SE, 10th Drive SE, and 185th Street SE). At 9th Drive SE, the configuration would change to sidepath across the community park along the west side of 9th Drive SE until it reaches 186th Street SE. This configuration could restrict parking along the local roads within the community to one side only.



Photograph 1. 183rd Place SE and 9th Avenue SE

The alignment would then run across the community park on a gentle slope and would encompass an open space on an existing 8- to 10- foot bark chip pathway behind private residences to the stormwater pond (see Photograph 2). The configuration would be a separated trail configuration. The grade of the existing path is undulating for the first 200 feet and would require some fill and retaining walls to smooth out the grade to meet regional trail standards. This stretch of the path would have less of a setback from the residences, and any widening would be on the west side of the existing path. The proposed trail would closely follow the existing pathway and continue onto a flat open space of Country Wood Phase III, with a greater setback from the private residential properties.



Photograph 2. Existing 8- to 10-foot bark chip pathway to stormwater pond

Trail Segment AB-3

This segment would be an alternative route connecting North Creek Park to Point B. This segment would run along the north side of 183rd Street SE with a sidepath configuration across North Creek Park, and a couple of private properties until 15th Avenue SE. 15th Avenue SE is currently a privately owned access or sewer easement. There is an existing 15- to 18-foot-wide gravel access road serving four private parcels (see Photograph 3). A trail crossing would be located on the east side of 15th Avenue SE access easement and appears to have good sight distance along 183rd Street SE. The sidepath would continue to run southward along the east side of the gravel road across two private commercial properties until the future extension of 186th Street SE. The sidepath would run westward across the north edge of a private single-family property until the current improvements end on 186th Street SE in Copper Creek Development community. Then, the sidepath would continue along the north side of 186th Street SE in a tract until the open space area of Copper Creek Homeowners Association between 10th Avenue SE and 12th Drive SE (see Photograph 4).

The alignment would then cross 186th Street SE and run across the open space area until it reached Point B. The open space area is a mitigation site designated as an NGPA that contains steep slopes, wetland, stream and buffer. The trail would be a separated trail configuration and run along the east side of the open space tract to avoid potential critical area impacts.



Photograph 3. 15th Avenue SE looking north



Photograph 4. Open space area of Copper Creek Homeowners Association

Trail Segment R-AB

This segment would serve as a connector route. The trail would be a sidepath configuration on the north side of 186th Street SE (see Photograph 5).



Photograph 5. 186th Street SE looking east

Trail Segment BC-1

This segment would connect Point B to 192nd Street SE. From Point B to 13th Avenue SE, the trail would be a separated trail configuration and encompass an existing pathway, with some potential adjustments for switchbacks in steeper areas. From Point B, the trail would follow the existing 8- to 10-foot bark chip pathway, which narrows down to a 3-foot bark chip/gravel pathway after passing by a community stormwater pond and continues to run down a lightly vegetated, gentle slope into the Foxglove Meadow community within the open common space owned by the community. There is a large area designated as an NGPA that contains a wetland, stream and buffer. At this point, the proposed trail would intersect the transmission line easements granted to Snohomish County PUD and Seattle City Light. The trail would follow the existing pathway that continues through the flat open space within the power line easement to 13th Avenue SE—a local, low-volume road within the residential community. South of 13th Avenue SE, an existing 15-foot asphalt access road that continues south for 150 feet would be improved. The proposed alignment would follow this access route and then continue south in the open space following the power line easement and crossing the designated NGPA to 192nd Street SE/Waxen Road where it crosses 192nd Street SE to connect to Point C (see Photograph 6).



Photograph 6. 192nd Street SE looking NE

192nd Street SE to SR 524

This area consists of the following trail segments:

Trail Segment CD-1

This segment would connect 192nd Street SE to the unopened right-of-way of Newton Road. This segment would run along the unopened Snohomish County road right-of-way, which is densely forested. The unopened corridor is relatively flat but traverses wetland areas. An elevated trail system (e.g., a boardwalk on pin piles) would likely be required for the majority of this segment. The corridor would also cross North Creek and require a short-span bridge structure and possibly a culvert for another drainage crossing. The bridge would span the channel migration zone and flood hazard area (see Photograph 7).



Photograph 7. 192nd Street SE and Waxen Road looking southwest at the unopened right-of-way

Trail Segment CE-1

This segment would be an alternative route to connect 192nd Street SE to Point E. The proposed separated trail segment would run along the transmission line easement granted to Seattle City Light. The trail would follow an existing 1-foot-wide dirt path located on what appears to be fill, running through a forested area for approximately 350 feet to North Creek. The trail would cross North Creek and require a short-span bridge structure to replace the broken wood bridge (see Photograph 8). The length that would be required to span the channel migration zone and flood hazard area appears to be wider than the crossing distance for Trail Segment CD-1 to span the channel migration zone and flood hazard area. South of the creek, the trail would traverse wetland areas and would likely require an elevated trail system (e.g., a boardwalk on pin piles) to Point E.



Photograph 8. Broken wood bridge crossing North Creek

Trail Segment DE-1

This trail segment would serve as a connector route to link Trail Segments CE-1 to DF-1 or CD-1 to EF-1. The proposed trail would be a separated trail configuration. The segment would run along the toe of slope below the Summit Ridge development and traverse wetland areas that would likely require an elevated trail system (e.g., a boardwalk on pin piles) for the entire length (see Photograph 9).



Photograph 9. Summit Ridge development ridge view looking north

Trail Segment DF-1

This trail segment would connect undeveloped Newton Road to a point approximately 100 feet north of the Winesap Road/196th Street SE intersection on Winesap Road. From Newton Road to 5th Drive SE/Sprague Drive intersection, the proposed trail would be a separated trail configuration. This segment would run along the undeveloped Snohomish County road right-of-way similar to Trail Segment CD-1, except there is some challenging terrain traversing south to the north end of existing Sprague Drive. In addition, there is loose soil on the side slopes and fallen trees, showing signs of slope instability. On Sprague Drive, the trail would change to a sidepath configuration and run along the south side of Sprague Drive where wider pavement and sidewalk currently exist (see Photograph 10). From here, the trail could cross at the intersection of Sprague Drive and Winesap Road and then turn to run along the west side of Winesap Road to 100 feet north of the intersection of 196th Street SE and Winesap Road. The west side would have few driveway crossings and appears to have adequate public right-of-way for a sidepath configuration. Alternatively, the trail could remain on the east side of Winesap Road, crossing the road 100 feet north of the intersection of 196th Street SE and Winesap Road. The primary advantage of this alternative is that adjacent residents do not have to back their vehicles across the trail.



Photograph 10. Sprague Drive looking south

Trail Segment EF-1

This trail segment would connect Trail Segment CE-1 or DE-1 to approximately 100 feet north of Winesap Road/196th Street SE intersection. The proposed trail would be a separated trail configuration. This segment would traverse a steep slope from either Trail Segment CE-1 or DE-1 along the Seattle City Light transmission line easement to the flat area behind the residences of Summit Ridge development (see Photograph 11). Switchbacks with retaining walls would likely be required for the steep slope area. The trail would run across this flat area until Winesap Road, then cross Winesap Road to connect to either Trail Segment FG-1 or FG-2 on the west side of the road.



Photograph 11. Seattle City Light transmission line easement behind Summit Ridge

Trail Segment FG-1

This trail segment would run from Winesap Road to Filbert Drive, connecting Trail Segments DF-1 or EF-1 with GH-1. The proposed separated trail would run along a Seattle City Light transmission line easement through the Willow Ridge development. It would then traverse the subdivision diagonally along a relatively flat, open area (see Photograph 12). The trail would cross 196th Street SE and 4th Drive SE, which is a low-volume local road within the subdivision. It would continue across a flat, open field following the transmission line easement, and turn south at Filbert Drive. The trail would change to a sidepath configuration along the east side of Filbert Drive until the Filbert Drive/Winesap Road intersection. Then the sidepath would cross at the existing intersection and connect to Trail Segment GH-1 on the west side of Filbert Drive. The trail users could cross at this existing intersection; if future traffic volumes warrant, the crossing could be signalized or stop-controlled in the future.



Photograph 12. Seattle City Light transmission line easement looking north through Willow Ridge development community

Trail Segment FG-2

This trail segment would connect Trail Segment EF-1 or DF-1 to Filbert Drive. The proposed trail would be a sidepath configuration on the west side of Winesap Road where fewer driveway/roadway crossings exist, and property improvements are set farther back from the road (see Photograph 13). The west side appears to have wider public right-of-way for a sidepath configuration. The sidepath would continue until the Filbert Drive/Winesap Road intersection where it would cross to connect to Trail Segment GH-1 on the west side of Filbert Drive.



Photograph 13. Winesap Road looking south

Trail Segment GH-1

This trail segment would connect Winesap Road to SR 524 (208th Street SE). Linking to either Trail Segment FG-1 or FG-2 after crossing Filbert Drive, the sidepath would continue along the west side of Filbert Drive where there are fewer driveways and larger, vacant parcels. The west side of Filbert Drive appears to have a more consistent width of public road right-of-way (see Photograph 14). This sidepath would end at the signalized intersection of Filbert Road and SR 524. The trail users would cross at this signal to connect to the existing bike lanes and sidewalks on SR 524.



Photograph 14. Filbert Road looking south

Trail Segment R-N

This trail segment would serve as a connector route along Harvest Road to link Trail Segments FG-2 to CI-1. This connector segment would be a bike lane and sidewalk configuration. This corridor has frequent, closely spaced driveways, intermittent existing sidewalks, and a rolling road profile (5 to 8 percent grade) (see Photograph 15). The street appears wide, ranging from approximately 25 to 30 feet of pavement. With some shifting and curb adjustment, bike lanes and sidewalks would be incorporated to minimize the impacts to adjacent properties.



Photograph 15. Harvest Road looking east

Trail Segment CI-1

This trail segment would be an alternative route connecting 192nd Street SE at Waxen Road to SR 524. Linking to Point C at 192nd Street SE/Waxen Road, the proposed trail would be a sidepath configuration on the south side of 192nd Street SE, running easterly to an open field west of the Canyon Park townhomes. The trail would change to a separated trail configuration heading south through the open field, crossing 194th Street SE, and terminating at 196th Street SE (see Photograph 16). There are some wet areas or ponding water in the open field north of 194th Street SE. A short boardwalk would likely be required to traverse through those areas. The proposed trail would continue south, then west crossing North Creek on a separated pedestrian bridge parallel to the existing two-lane road bridge. After crossing North Creek, the trail would change to a sidepath configuration and head south along the west side of 13th Drive SE, passing through private property south of the dead end of 13th Drive SE.



Photograph 16. 194th Street SE looking south

South of the private property, the trail segment would continue south along 13th Drive SE/14th Drive SE. The proposed trail configuration along this section as originally evaluated (see Table 2 in Section 7 of this report) would consist of bike lanes and sidewalks due to the frequent driveways. There are intermittent, existing sidewalks and mature landscape and trees along the 13th Drive SE/14th Drive SE roadway corridors (see Photograph 17). The bike lanes and sidewalks would run south to SR 524. As described in Section 10, a shared roadway with wider sidewalks was also considered for this southern portion of CI-1 to SR 524.

A mid-block, pedestrian signal could be required to facilitate crossing to the south side of SR 524. The eventual trail connection would be located on the south side of SR 524.



Photograph 17. 13th Drive SE looking north

Trail Segment R-S

This trail segment would serve as a connector route along Grimes Road to link Trail Segment GH-1 to CI-1. The proposal for this connector segment would be a bike lane and sidewalk configuration. This corridor is similar to Trail Segment R-N, except it appears to have a steeper road profile (10 to 12 percent grade) (see Photograph 18).



Photograph 18. Grimes Road looking west

SECTION A-2

Options for North Alignment

Option A

This option follows the same alignment as Trail Segment AB-3 (Figure 9). Like Trail Segment AB-3, Option A would run along the north side of 183rd Street SE until crossing on the east side of 15th Avenue SE. The sidepath would continue to run southward along the east side of 15th Avenue SE until the future extension of 186th Street SE. The sidepath would run westward across the north edge of a private single-family property until the current improvements end on 186th Street SE in Copper Creek Development community. Then, the sidepath would continue along the north side of 186th Street SE in a tract until the open space area of Copper Creek Homeowners Association between 10th Avenue SE and 12th Drive SE.

After crossing 186th Street SE, the alignment of Option A still corresponds to Trail Segment AB-3, running across the open space area (NGPA) until it reaches Point B. However, the configuration through much of the NGPA would be an elevated structure, due to the presence of higher quality wetland, stream and buffer. Thus, the estimated construction and mitigation costs for Option A are higher than for Trail Segment AB-3. Table C-3 in Appendix C includes the opinion of cost for Trail Segment AB-3. Table C-4 includes the opinion of cost for Option A.

Option B

The alignment and configurations for this option would be the same as those for Option A (Figure 9). However, this option would avoid the Copper Creek NGPA entirely. Instead of crossing 186th Street SE, the alignment would continue on the north side of the street to the intersection with 10th Avenue SE. The trail would cross the road a little north of the intersection.

From the crossing, the alignment skirts the community park to the north and would encompass an open space on an existing 8- to 10- foot bark chip pathway behind private residences to the stormwater pond. The configuration would be a separated trail configuration. This stretch of the path would have less of a setback from the residences, and any widening would be on the west side of the existing path. The proposed trail would closely follow the existing pathway and continue onto a flat open space of Country Wood Phase III, with a greater setback from the private residential properties.

Option C

Option C closely resembles Trail Segment AB-2 (Figure 9). Like Trail Segment AB-2, Option C would run along the north side of 183rd Street SE to 9th Avenue SE. After crossing 183rd Street SE at 9th Avenue SE/183rd Street SE intersection, the configuration would become a sidepath on the east side of 9th Avenue SE until it reaches 183rd Place SE. At this point, Option C diverges from the road right-of-way to skirt a stormwater pond and cut through the NGPA to the south. Portions of the alignment would be separated trail and portions would be on elevated structures.

APPENDIX B

Summary of Public Comments

June 2010

North Creek Trail Open House Meetings

In early 2010 Snohomish County began Phase 1 of its plan to build a section of North Creek Trail between SR 524 and 183rd Street SE, west of the Bothell-Everett Highway. The trail will be part of a coordinated regional system that will eventually connect the Sammamish River/Burke-Gilman Trail in King County with the Snohomish County Regional Interurban Trail in Everett.

Phase 1 of the project consists of identifying a preferred alternative and purchasing the necessary right-of-way. Funds for Phase 1 are provided through the Brightwater mitigation agreement between King County and Snohomish County. Phase 1 is expected to be completed in 2013.

The purpose of the three public meetings in June 2010 was to introduce the alignment options under consideration, ask for comments, and provide information about the process for Phase 1 and how the public could stay informed and involved in the process.

The three meetings were scheduled as follows:

Monday, June 14, 6 to 8 pm, Lynnwood High School, 18218 North Road, Bothell—30 people attended and were generally supportive of the proposed trail.

Wednesday, June 16, 6 to 8 pm, Crystal Springs Elementary School, 21615 9th Avenue SE, Bothell—31 people attended. A number of residents of 14th Avenue SE voiced opposition to a trail along their road. They were upset about a “long and problematic” sewer line installation by another agency.

Wednesday, June 23, 6 to 8 pm, Mill Creek Council Chambers, 15728 Main Street, Mill Creek—30 people attended; 19 people signed in.

As of July 7, 2010, 62 comment forms have been received and responses are provided below.

1. What is your interest in the project?

33 –I am a resident of the area

26 –I am a property owner along one of the alternatives

24 –I support trails and open space

6 –I would use the trail for commuting

3 –I am a business owner

9 –Other

- City of Mill Creek Planner
- Bothell City Council member
- Paid by those who use it
- Local recreationist
- Use trail for recreation
- Bicycle
- Grapevine set up after sewer mess that's still not over
- Concern of park/trail maintenance/safety
- I would use the trail for walking and birdwatching

2. What do you think should be the 3 most important considerations for trail planning:

- 33 –Connects to other bikeable/walkable areas
- 27 –Fits with the neighborhood
- 25 –Safety
- 15 –Provides opportunities for observing urban wildlife
- 12 –Provides access to services and area businesses
- 11 –Serves different age groups and abilities
- 7 –Construction costs

Other

- Practical/functional
- Public acceptance
- No use of eminent domain to acquire property
- Protects property owners and their privacy
- Private property rights
- Impact on property values
- Paid for by users
- Do Not Do It!!
- Crossing signals at existing roadways, especially at Centennial Park area
- Topography of route
- Neighborhood traffic flow on 183rd during and post construction (how will existing traffic be re-routed/handled?)
- Not destroying house properties
- People it affects!! Namely homeowners losing value in their homes because of the trail
- People along the route
- Maintenance long-term
- Maintenance considerations
- Maintenance assured \$\$
- Whether the families along this alternative approve
- Disruption of my life and loss of my property
- Loss of our property
- Safety – backing out of driveways

3. Comments: Is there anything you know about the area along the alternatives that the county should consider during the planning process? Do you have other comments?

- Clearwater School and Commons (north of school) would love a route along their property boundary. Wetland along trails/CI-1 already pedestrian walk from here north to North Creek Park.
- The property just north east of Clearwater School is slated for a 15-unit low impact intentional community. Members are excited about possibility of trail bordering the property.
- From the graphic displays I am surprised to learn of the North Creek Regional Trail that I had no idea it existed. I will do some research on the internet to locate these trails so I can enjoy them in the future. I hope that future graphic displays will demonstrate where trails are under construction and where you have to detour around construction.

- The intersection at 14th Dr SE and 208th St SE has nothing to provide safe access to the south side of 208th if Alt. CI-1 is pursued. A stoplight with cross walks or pedestrian/bike over-crossing would be necessary to ensure safety. 1. For alternative CI-1 would there be a project at 208th St SE to aid pedestrians or cyclists in crossing the busy road? Either a stoplight or overpass seems necessary to cross safely. 2. The current parking area at Centennial park is rather small. Would it be expanded to handle potentially large quantities of vehicles? 3. My personal preference is CI-1 as it seems to stay closest to the North Creek floodplain which means likely more wildlife to see and quieter nature feeling neighborhoods. 4. Could a parking area be put by the Clearwater School along Alt. CI-1 for extra trail access?
- I am happy to see that for the most part the trail does not follow high power transmission lines or gas lines.
- Would like to have seen a little more detail about time frame, variables w/choices ie: obstacles, county, state, federal requirements, etc. With alternatives shown, it seems Filbert Dr is the only choice which needs good connect with trail to Canyon Park. Trail at 214th and Hwy 523 needs to cut across Centennial Park over to 9th/Filbert Dr. and Hwy 524 intersection. There is no safe way to cross 524 except at 527 or 9th/Filbert Dr. stoplights.
- Do not go down 13th/14th, the residents will not be friendly. Start points for H and I don't make sense. There is a bike trail on 9th already that goes by 2 parks. Before making a decision, someone should talk to the residents along the routes. Specifically route I. There is specific history with SNOCO Public Works and the residents along that route.
- After seeing the possible alternatives I favor the most direct route on the eastside AB-3, BC-1 to C-1 along 14th Dr. SE and 13th PI SE.
- At this early stage in the process, alternative CI-1 looks like the option that provides the most opportunities to enjoy and experience the North Creek wetland corridor while also providing some connectivity to the Thrashers Corner services and businesses.
- Perfect alignment would be flat, off street, connect to other segments with relative straight path; follow the creek whenever possible.
- The plan to complete the missing segment of the North Creek Trail is very sound and methodical. My impression is bike riding in Snohomish and King counties is rather dangerous because of heavy motorized traffic and limited designated bike rider space...so the trails are especially important for safe bike travel and recreation.
- We will fight this trail from invading our property. We do not want or support it. After talking to our neighbors, it is clear they feel the same way.
- I live on 14th Dr. SE. Speeding cars, which are a current issue, and the number of people living in one residence causing parking congestion on both sides of the street, both are not something that will work with the path. Use Bothell Everett Hwy.
- After dealing with the disaster that was Alderwood Wastewater's destruction of 14th Dr. last year, I personally feel that the residents of 14th Dr. have sacrificed sufficiently and fulfilled our civic duty. I have an appointment with an attorney and I WILL fight this to the bitter end.
- Most of these areas are mature residential neighborhoods with several driveways and landscaping. Residential neighborhoods are not a safe place for bicyclists (cars entering and leaving driveways). We are against this on 14th Dr.
- No New Taxes!!!
- There is a lot of speeding and accidents along 14th Dr. It can be considered an arterial.
- I am tired of you stealing people's property for these projects. We have horrible roads. How about fixing them first!!

- High populations and housing density on 14th Dr. SE. Traffic safety concerns. Many, many driveways would need to cut across path daily. Many speeding vehicles on 14th Dr. SE – it's used as an arterial.
- Stay far away from green belt.
- I think that having pedestrians and bicycle traffic having to double back to get to Centennial Park is not considerate of trail users. Please insist on a signalized crossing. Cars should be able to wait a few minutes. A disabled person may not be able to traverse the distance to the light at BE Hwy and back down.
- I'm concerned about crossing Hwy 524. A crossing at Bothell-Everett Hwy would be dangerous although I do like the CI-1.
- Intersection of 192nd and 13th is at the crest of a hill. This is a blind hill for cars, if you add bikes it will be a disaster. How about paving and widening 15th?
- I am excited about connecting trail for easy access for biking.
- I like the Filbert Dr. alt.
- Nice shoulder on 14th Dr. SE but crosses lots of driveways behind houses looks good with consistent grade – Filbert Dr. and Winesap would need a consistent wide shoulder – Rt-FGI goes through housing development – not good – Need to improve 9th Ave. SE on southbound side – no shoulder that is consistent – Bikers currently use Filbert Dr. and Winesap. This would be a good route to keep.
- Most of the commuter traffic will be North-South. The shortest route will attract the most commuters. The East-West options add a lot of elevation gain and might be avoided. Path needs to be paved, not left in crushed rock like North Creek trail which is currently unusable. Preferred route CI-1, BC-1, AB-2. Currently commute from approx. FG-1 to 9th Ave. SE to 228th, to Fitzgerald, to Cascade, to Burke-Gilman. Commute times are 3:30 am–5 am, 3:30 pm–5 pm.
- Consider open meeting with speaker to explain current and purposed plans. Would like to see a story on the history of existing trails = Mill Creek Journal? Would help get the story out and be of interest.
- I would like to know how you plan on maintaining the park/trail. Also interested in additional information as the planning phase continues.
- The road (13th Dr. SE) next to my house is narrow. We don't have sidewalks in all sections (over the bridge and along 196th St SE). I think that building these sidewalks should be a higher priority over the trail.
- I walk the area and several of the proposed alignments a lot! I'm very excited for this project! I think the power line easements could be utilized. Staying close to the creek would be nice (though probably more expensive w/permitting).
- Wrong street for bike/walking trail, too dense with driveways, speeders, vision issues, flooding issues, construction fatigue, would ruin our property by removing our trees, frankly the current sewer issue has taught 14th Dr. SE residents not to trust this process and we have endured enough damage and what bike trail wants to look at a dense housing area when one mistaken back-out could seriously hurt somebody!
- We already have flooding issues from 13th Dr. St. Will not be safe to back out of our driveways. Limited site of vision. This will take away my street buffer. Will also take down many trees along 14th Dr. SE.
- 14th Dr. has already given blood with the sewer trunk line. Many driveways – high density – and we already have flooding issues! Adding more pavement – removing trees will only make it worse. LEAVE US ALONE.
- We are unincorporated Snohomish County – constantly taken advantage of. Why no options on east side of SR 527 where density is lower? Would align with trail on down to Bothell. NOT ON 14TH DRIVE, PLEASE WE ALREADY DID THE SEWER LINE.

- Need more information about connectivity at interurban. Also more info. about North creek trail – maps etc. It's not clear how to access the existing sections of the trail.
- I am concerned about spending to increase trails without planning for long-term maintenance and safety. For example, the North Creek Park trail boardwalk has been underwater for nearly 2 years with no sign of improvement. I recommend including improvements to this portion of the trail w/this plan and a plan for long-term maintenance for the entire project.
- 1) Must work with Parks for proactive consideration of N. Creek Park trail connection: safe use of bikes – maintenance (lack thereof) – increase use. 2) Routes that won't encourage "short cuts" through less safe road network alternatives.
- The construction budget/proposal should include making the boardwalk in the North Creek State Park bike width.
- Minimize the impact wherever possible – use existing pathways/roads. Make sure funds are available for maintenance before beginning project.
- We have enough through traffic, auto pedestrian. Not only will this disrupt our neighborhood, our street is rife with speeders which needs to be addressed.
- We absolutely do not!! want this trail down our road (14th Dr. SE). We do not want CI-1 to be the path. We have had enough disruption due to the sewer project. We will not give up our property. It is not a safe road for bikers/walkers – the police will not monitor speeders now – even after repetitive requests by multiple neighbors.
- We absolutely do not want the trail on 14th Dr. SE. It is the wrong road for a safe trail. We do not want it.
- Most direct, topographically flatter, and nearer to businesses for commuters would be to make trail in area 14th Dr. SE eastward to Bothell Hwy. North Creek areas west of this likely too steep. If you decide on Sprague Dr., Filbert Dr. a little better compared to Grimes & Harvest which are steep.
- I am most interested in a connection that goes between Centennial Park and North Creek Park, without having to go east to the Bothell-Everett Highway. A trail crossing of North Creek is critical to this connection, and for me the extension off of Sprague Dr. (DF-1 and CD-1) would work the best.
- My home on 20525 14th Dr. SE will be changed into an interurban trail. Through a dense area of homes with 60 x 100 lots. All these homes have an average of three vehicles, including working class trucks. It is an arterial road servicing the residents of this multi home development, used for emergency and commercial services. I am totally opposed to the North Creek Trail, where North Creek cannot be seen on 14th Dr. I will fight imminent domain of my property. This neighborhood is behind locating North Creek Trail to Filbert Dr. Spend your money for schools, not on eminent domain bike trails in working class neighborhoods. You will be blocking driveways, giving all right away to bicycles, scooters and foot traffic from distant residents, hobos, etc. They will be invading our little neighborhood. There goes the neighborhood watch, hello expensive alarm systems and no privacy.
- We put up with the sewer line (way too long and they are still not done) along 14th Dr. SE. Leave US ALONE!!! Use route GH-1, this is a much more scenic ride or walk. Cars average 50 – 60 mph down 14th. Police refuse to police!

4. Please rate the meeting. What can we improve for the next meetings?

Please circle:5 = excellent1 = inadequate

Notice of the meeting... 5 (24) 4 (10) ...3 (11) 2 (1)1 (4)

Printed materials..... **5** (15) **4** (20) ...**3** (10) **2** (4)

Meeting format **5** (15) **4** (13) ...**3** (16) **2** (3)**1** (1)

..... Would have appreciated some time for presentations/overview of project

Graphic displays **5** (20) **4** (18) ...**3** (8) **2** (2)**1** (1)

..... Topographical map would have been helpful

Project description **5** (13) **4** (13) ...**3** (17) **2** (5)**1** (1)

5. How did you learn about the meeting?

33 -I received a postcard

5-Neighbor

4 -I saw the ad in the Herald

4-e-mail from the County

3 -I saw the North Creek Project web page

2 -I saw the ad in the Mill Creek Enterprise

1 -I saw the ad in the Bothell-Kenmore Reporter

Other

- Northshore handouts
- Email from COB employee
- Worked on project
- At City Hall

FLIP CHART NOTES

- Health concerns re: routing people in gas/power corridors
- Clearwater reach along North Creek (Clearwater school and Clearwater commons) support option C1-1 along North Creek. Already pedestrian path from here through mobile park, quadrant homes, and trail to North Creek Park.
- Would like to see permeable pavement and rain-gardens wherever feasible.
- How does the county intend to maintain the trail when built? (Ex: portion of trail to north that is "under water")
- Drainage issues along 14th Dr. Also traffic problems speeding 50 – 60 mph common. Also traffic hazards with driveways, it's difficult now much less adding bike riders who will feel a sense of right of way. Someone will get hurt given these conditions! NOT SAFE
- Speeds and accidents on 14th, number of driveways on 14th
- How to get across 208th – no signal
- Property impacts
- Construction access and impacts
- Population/housing density on 14th and privacy implications
- Mature trees
- Quality of trail experience – do I want to look at a house?

- Why isn't segment EF considered?
- Consider extending 10th.
- Think about 9T, SR better connection?
- Connect points E & F in power line easement
- 14th Dr. already had sewer line run down the street. Enough is enough.
- Speeding very common on 14th Dr. – not safe
- Shouldn't trail go through the centennial park – 14th Dr. skips the restroom facilities
- Who will maintain the trail and pick up trash?
- Why no options on E side on SR 527?
- Stormwater runoff flowing from street to private parking – 14th
- Consider alignment east of SR 527. (Lower density - less impacts)
- NC Park Boardwalk needs to be maintained
- 12th/185th St. Foxwood Meadows has wider streets
- Water come in from damaged drain pipes cause flooding. Drain pipe from those houses on west side of 14th would need to be hooked to the main drain system now covered by the ditches you would need to over up for a bike lane. Numerous trees would have to be removed to accommodate the lanes ruining also the look of our homes while also removing all shade/cooling of our homes.
- Flooding on this side due to road repaved higher and too much pavement
- Drainage ditch from 13th runs down the property fence line not on the street
- Boardwalk at NC will need to be able to handle bike traffic

MAIL AND EMAIL COMMENTS:

- I am one of the owners of the Clearwater Commons along one of the proposed routes for the North Creek Trail that you are seeking feedback on. (According to your map it's segment CI-1 between 196th St. SE and 194th St. SE). I want to express my support for routing the bike trail along our property there. It's a beautiful stretch and would be lovely for the bicyclists and walkers moving along the trail. Having the trail there also supports our philosophy of low impact. I learned from one of our other members (who attended one of your public meetings) that the route through there is less hilly than some of the others – as a casual biker and frequent walker, I can really support a flat trail. ☺
- I am looking forward with great anticipation to the day the North Creek trail will be finished, allowing pedestrians and bicyclists to travel without a car to Bothell and the Burke-Gilman trail and north to the Interurban Trail.

I was unable to attend any of the public meetings about the proposed alternative routes, so I'm writing to support the CI-1 proposed alternative. I am a member of the Clearwater Commons cohousing community now under development between 192nd and 196th Streets SE. The CI-1 route would run along the east edge of our property, which would obviously make using the bike trail very convenient for all of us in that community. We would welcome a path so close to us, allowing us to travel to services without a car and get exercise and recreation. I look forward to watching the North Creek Trail project progress and hope the CI-1 route ends up being the preferred route.

- We live on 14th Dr. SE, and are very concerned about the alignment of the NC Trail for many reasons.
Safety: 14th Dr. is a high density area with many driveways and extremely fast traffic. Police could make big money if they would patrol it.

Drainage: 14th Dr. has drainage issues on both sides of the road. Last year we were told by Snohomish County that our ditch HAD to be left open so our house wouldn't flood worse than it does now. Can we have open ditches, a trail, a road, and still have any yard left?

Mature trees: 14th Dr. is lined with mature trees on both sides. Based on the calculations we were given, those would go. It's our only positive feature, and certainly a source of privacy and beauty. We are trying to be a neighborhood.

Past projects: We have endured many past projects already. We had to fight to keep Brightwater out of the neighborhood – it was placed in an industrial area which makes much more sense. We put up with two years of 208th St. being widened, and two summers of the pounding as the bridge was built. 208th was edged with an ugly cement wall on one side (try walking that sidewalk—it is scary) and a fence on the other side that keeps us out of an area that used to be used for walking dogs. That same area, now a retention pond edged with concrete barriers, used to be a beautiful grass field. The widened road was never completed, so it goes only a few block beyond us. We had a sewer trunk line put down our road that took a full year, damaged our landscaping, disturbed our peace, and is still unusable/incomplete. The road hasn't been repaved to the original condition – and when it is, unless it is ground lower (we were told it wouldn't be), will increase our flooding. We have been victim to enough of Snohomish County's growth already.

We are at edge of unincorporated Snohomish County – where we pay the taxes, but do not get the services and appear to be a dumping ground. Doesn't it matter how this trail will affect the people of the area? Doesn't it matter that we really don't want the trail? We support trails – but not through neighborhoods at the expense of the neighborhood and the citizens that live there. Trails should be areas that are beautiful and enjoyable for walkers as well as for bikers. The new trail through the Canyon Park Business Park replaced a beautiful, treed and shady walking trail with a wide, paved roadway that is too hot to walk on if the temp. goes over 70. Bikers are a safety threat to walkers. Another case of progress taking us back a step. Why is it so important for all the regional trails to connect? No one wants to use the ugly sections anyway. 14th drive would be an ugly section, and not safe for bicycles, commuters, either. If the trails must connect, what about aligning the trail on the east side of Bothell-Everett Highway, behind the business strip where there is still a green strip (prettier and safer, too)?

Following are the objections to section AB-3 of the Trail:

- 15th Ave. SE is the ingress/egress for four private parcels. In addition, two others have easements along 15th Ave. SE.
 - Foot and bicycle traffic on a 14-foot-wide proposed trail cannot co-exist with vehicle traffic on a road that is 18 feet wide.
 - Further, where 15th connects with 183rd, there is only 23 feet from the side of the house (on 183rd) to the fence on the adjacent property.
 - Plainly put, the proposed trail would impermissively block the ingress/egress rights of four parcels, and infringe on the rights of two other parcels.
- The water and sewer lines for two homes are under the gravel lane of 15th Ave. SE, extending down to 183rd St. SE. The water line and the 6" side sewer line were installed by a property owner along 15th Ave. SE, and therefore owns them.
 - By code, the 6" side sewer line cannot be paved over. To be paved over, it would have to be replaced with a 12" main line at a substantial cost, if allowed. Because

this property owner paid for the installation of the sewer line and held a bond for one year, he controls who can tap into this line and the fee for same.

- The proposed trail would dissect property owned by Abbie Dale (Property Tax No. 27051800105200), rendering her property to the east of the trail useless.
- 15th Ave. SE is a private, secluded gravel road. This protected private area would be unacceptably disturbed by foot and bicycle usage.

Fortunately, AB-3 is not the only route proposed. The County has proposed two routes to the North Creek County Park: AB-2 and AB-3. In addition to the reasons above, AB-2 is a far better alternative for the Trail than AB-3 for these reasons:

- AB-2 runs along existing roadways
- AB-2 is a more direct route
- AB-2 provides easier access for the housing developments as it runs through them
 - 15th Ave. SE (AB-3) is isolated and provides opportunity for crime. Conversely, AB-2 runs through open public areas in established neighborhoods. This provides more opportunity to observe activity on the trail and thereby deter criminal activity.
 - Applying Crime Prevention Through Environmental Design (CRTED) would clearly result in the trail being aligned along section AB-2 and not AB-3.

For these reasons, these property owners object to the proposed alignment section of AB-3 and request that the Trail (if built) instead be aligned with section AB-2.

- The following suggestions are of observation of community discussion:
 - North Creek Trail needs to connect to the parking lot of Centennial Park, Bothell WA.
 - North Creek Trail should be continued north to eventually connect to the Centennial Trail.
 - Northwest Culture art should be added along the trail such as Native American art, Orcas, Whales, Eagles, Bears, Deer, Wolves, etc.
 - Benches should be added along the trail for resting.
 - Garbage cans should be added along the trail.
 - Emergency phones should be added to dial 911.
 - To have an annual bike festival for North Creek Trail.

March 2011

North Creek Trail Open House Meetings

How Did you learn about this meeting?	What would you most likely use the trail for?	Were you able to attend one of the open house meetings in 2010?	Do you have any additional comments?	Prefer option
newsletter, email	bicycling	yes	I prefer the east route because of cost and is more direct with less grade issues.	east
		no	Go for the low/cost less environmental cost. East alignment I'm for it. We would contribute to this!	East
			I am a neighbor along the eastern alignment. Even though we had some bad problems with the North Creek Interceptor sewer project, this alignment makes the most sense for following North Creek. I believe this would be a tremendous asset for our neighborhood. The other alignment requires you go ride up and down some steeper hills while ours is mostly flat and I believe less expensive. I would volunteer to help with this project. I also have approached Mill Creek because there is property along 196th st that could be made into a park and access point for the trail. It is 1500 196th st se. It is available for sale. Please let me know what I can do to help make this project happen along this alignment. via email	east
			I am deeply disappointed that the 14th/13th route is still under consideration. There is already pending litigation with the county over previous work that damaged property along this route. In addition, King County is already in the process of restarting a project that will tear up the street again. This particular route will not be well accepted by the residents along it. via email	
			Would prefer west alignment, because it is seperated.	west
			Citizen believes property to east of north creek is county property so it should be used as trail alignment, so don't use 14th! Surfacewater - salmon restoration Brightwater Prog.	East
			I would love to see the North Creek pedestrian and bike trail be on the east side alignment. My son attends a school which is situated next to this potential trail. There are more than 60 students who would enjoy this trail on a daily basis. It is a beautiful area, but unfortunately there are very little sidewalks or trails to allow mobility of people in the area. The walk on the Bothel-Everett highway is not only unpleasant, but also seems dangerous for kids. I hate to see the suburbs become centered only on getting vehicles where they need to go, and this sounds like a great addition for the growing neighborhood. I hope you will consider these children in your decision making. via email	east
ad in herald		no	I live near Sprague and favor the west alignment option. Besides being close to our home it will provide a quieter more natural environment for walking, biking, etc. I trust that environmental impact can be effectily minimized.	West
			I am vehemently opposed to this North Creek Regional Trail (East Alignment) being shoved down our throats. We still haven't recovered from all the damage The Brightwater Sewer Project has caused and I will fight this with all my other neighbors and take legal action if necessary. This project is not necessary and since we don't have the funds for it anyway...why are they pursuing it...contrary to popular opinion! via email	
			I would like to register my support for the proposed East Alignment. I own property along that route and am also associated with a private school adjacent to the route. The trail would provide a safer path (than Bothell-Everett hwy) for the kids from the school to visit the North Creek park and as a property owner I welcome the bike path along the edge of my property. via email	east
			I'm sending this email to show my support for the East alignment of the North Creek pedestrian and bike trail. My two children attend the Clearwater School, and I believe the trail would be a wonderful resource for the students of the school and the whole community. via email	east
	Bicycling, jogging/walking	no	I prefer the east alignment. I own property at 194th St and would love to have a trail "in my front yard". I also like the idea of being able to walk to thrashers corner without going on B-E Hwy. The east alignment seems like an obvious choice. Less costs and less environmental impact.	East

March 2011

North Creek Trail Open House Meetings

How Did you learn about this meeting?	What would you most likely use the trail for?	Were you able to attend one of the open house meetings in 2010?	Do you have any additional comments?	Prefer option
			I am writing to express my preference for the east alignment as it is lower cost, lower impact, and seems like a more direct route. Via email	east
other		no	Don't put the trail on 13th Dr SE. You will disrupt homes that have been there for over 20 years. Move across the street behind the creek. 13th Dr is a high traffic area now.	
other		no	Find different area for trail or move to 9th or behind creek, not on 14th and 13th Dr SE. This would impact our neighbor significantly!	
			East alignment: improves the value of my property to add sidewalks, curb extensions modernize the neighborhood, traffic calming needed. Serious drawbacks: amount of traffic is dangerous, traffic reversing when they realize it is not a through street is hazardous to safety. West alignment is the best choice.	west
article, Herald	bicycling	no	Would like to see LID features; west option is better since there is less road/trail sharing. If the route was less circuitous and more direct (north/south) more commuters would likely use it.	
email	jogging/walking	no	I like the west trail	West
newsletter, email	bicycling	yes	We strongly support the west alignment. We feel it would be a very strong improvement to our neighborhood and we would use it regularly.	west
newsletter	bicycling, spending time in nature, jogging/walking	yes	We just moved to a new house off Winesap, very near the west alignment. Winesap and Filbert are currently very dangerous for cycling, which has been frustrating. We would welcome either alignment but the west alignment would be a dream for us!	west
			Our son is a student of the Clearwater School in Bothell. As members of the school community we want to send our support for the eastern alignment of the North Creek pedestrian and bike trail! We wanted to come to one of the meetings but travel plans have made that impossible. Do you need further information about us to register 2 "yes" voices for the eastern alignment? Please let us know what we can send you. via email	east
mommy	Bicycling		Hello, I am an 8 yr old girl and would like a trail because I want to bike	
ad in herald	spending time in nature, jogging/walking	no	I am in strong support of public space even if it means some personal sacrifice in terms of right of way. I don't know the options well and will be following this process, and participating in this as I am able.	
newsletter, email	bicycling	yes	Please build this soon! I especially like the east alignment because it is a straighter less hilly route. I have a concern about the west alignment because people often don't stop at the intersection of Winesap Rd and Harvest Rd.	East
			Thank you for your efforts in including the community in the design process. Via email	east
ad in herald	Bicycling, jogging/walking, commuting	yes		
			Please choose the east alignment for the continuation of the North Creek Trail. Via email	east
ad in herald, neighbor	jogging/walking	yes	Concern with bikers on the streets, 14th, & 13th Dr. Although the side walks would be ok, what happens if the young bikers use the sidewalks? With the neighborhood houses, western segment would be nature trail.	West
friend	Bicycling, spending time in nature, jogging/walking, commuting	no	I strongly support the east alignment due to the lower cost and lower environmental impact, as well as the easier access to SR527 and the businesses located along it. Thanks!	East

March 2011

North Creek Trail Open House Meetings

How Did you learn about this meeting?	What would you most likely use the trail for?	Were you able to attend one of the open house meetings in 2010?	Do you have any additional comments?	Prefer option
Clearwater School	Bicycling, jogging/walking, commuting	no	I prefer the east alignment. I live half a block from there (near the Clearwater school) and would use it daily. The plan looks more affordable and has less impact on the environment. It will be better for commuters as well and is close to all the businesses on Bothell-Everett Highway. The west alignment doesn't go near any business district so is a lot less practical. I'm also worried about the environmental impact on the wetlands of the west alignment and I am very worried about the higher cost. It just makes no sense to spend more money for a trail that can't access the business district and will have a more negative environmental impact!	East
newspaper	Bicycling	no		
newspaper	Bicycling	no	My preference is the west option because of separated trail and side paths. Also because of more natural setting. Safer and more scenic. Also the crossing at light at 208th/Filbert Dr. is safer.	West
newsletter, email, ad in herald, neighbors	spending time in nature, jogging/walking		Our privacy was already compromised by sewer line work. Don't need anymore messing with us. 14th Dr is not a safe street due to traffic/many driveways. We'll lose what little road side parking we have. <u>Leave us alone.</u> Not a natural route, downright ugly in fact. Who wants to walk through a neighborhood when parks are available? Why waste the money? Very concerned about maintenance, no matter where it's placed. Adequate maintenance budget should be prerequisite to even thinking about this. Both "parks" close to us lack maintenance. Trail caving in at N. Creek. No scoop bags for months at centennial.	
newsletter, email, ad in Herald, concerned neighbors	spending time in nature, jogging/walking	yes	Living on 14th Dr SE has been a series of insults from Sno. Co. We've been told we could not have "traffic calming devices" for 30 yrs now. WE were told ditches could not be filled because it would cause flooding (which has increased lately w/weather patterns...) We have an unfinished sewer trunk line running down our road. We put up with the widening of 208th/Filbert and 2 summers of pounding as they worked on the bridge over North Creek - but the project never went any further. :(We feel abused - <u>please leave us alone.</u> We know we're the cheap route - but we're not the best route. Concerns: *Traffic on 14th is heavy and fast - many driveways - safety issues. *Bike lane on road - really?! That is not a bike trail. *Who will maintain plantings? We have high % of renters. *Who will maintain "trail". Trail through North Creek business park is washed out and caving in since Jan. storms. *Not a natural route - does not go by park facilities.	
newsletter, email	bicycling, spending time in nature	yes	I feel that long term (once commuters start using) that the west is the better option. Mostly because of the congestion factor on 14th/13th option. That's a lot of driveways to cross.	west
			I am in favor of a North Creek Trail running along the east side of a property I am involved with, the Clearwater Commons, address: 1402 196th ST. SE, Bothell, WA. I think it would be a wonderful addition to the type of housing development we are working to create, as well as be a huge asset for walkers, bikers, and runners avoiding the busy hwy to the east. via email	east
			I wanted to make sure my voice is being heard, as I am not sure I will be able to attend the last public meeting regarding the new North Creek Trail. As a part land owner of the Clearwater Commons low impact development community, located at 1402 194th St, SE in Bothell, I am very much in support of the East Alignment for the new North Creek Trail, and here are a few reasons why: <ul style="list-style-type: none"> • The East Alignment is 50% cheaper than the West alignment • I like having an alternative route to local businesses and to the park besides the Bothell-Everett Hwy, especially for my kids • The East Alignment disturbs less wetland than the West Alignment, showing a value and concern for non-disturbance of these precious areas • And families and kids can use the trail to commute to school or work resulting in at least one less car on the road. via email 	east

March 2011

North Creek Trail Open House Meetings

How Did you learn about this meeting?	What would you most likely use the trail for?	Were you able to attend one of the open house meetings in 2010?	Do you have any additional comments?	Prefer option
email	bicycling	no	Thanks for an excellent and informative evening. I believe the west alignment trail is the best choice given homeowner opposition to the east. A longer more scenic and separated trail seems preferable to me and makes more sense for the mostly recreational use as opposed to commuter bicycling. Hopefully the extra cost can be mitigated by grants from local and federal agencies?? Thank you.	west
email, webpage, article in Herald	Bicycling, jogging/walking, commuting	yes	We live at Clearwater Commons. We would like to have the east trail alignment	East
mailing	bicycling, jogging/walking	yes	Consider to build the west alignment trail. Connect west alignment trail and north creek trail to centennial park. Connect centennial trail to north creek alignment. (north alignment)	west
mailing	bicycling, jogging/walking	no	Please consider to build the west alignment trail. Connect centennial trail to north creek alignment (north alignment)	west
			I was not able to attend the North Creek open houses, including the one next week at Mill Creek. I would like to have my comments included in your poll. Our family (5) would prefer the West alignment of the North Creek Trail. We would use the trail for bicycling, spending time in nature, jogging/walking and commuting. We received a notification in the mail and we attended an open house in 2010. Thank you, Ed Scullywest Via email	west
Newsletter via front door	jogging/walking	yes	Would prefer the west alignment. Filbert and Winesap are very busy with dangerous roads for anyone to walk on. Putting in the trail system here would give the community a safe place to travel besides the road with ditches.	west
			I'd like to advocate in favor of this trail. My daughter attends Clearwater school, and this would enable the children to explore North creek wildlife on a safe path. Via email	
email	bicycling	yes	Hope the expenses of a west alignment aren't prohibitive since it will go through a great deal of neighborhoods that don't currently have any where for bicyclists to currently ride.	west
article in herald, neighbors	jogging/walking	yes - did attend	I supported the western segment. Too many concerns for bikers riding on street (14th, 13th). They'd probably compete for sidewalk space with the walkers.	West
email, webpage	Bicycling, spending time in nature, jogging/walking, commuting	no	I would like to see the trail constructed along Winesap and Filbert (west alignment). Currently we have no sidewalks serving a socioeconomically diverse area with many children and families. This would be a significant improvement to our area and improve safety for the children in our community tremendously.	West
Webpage	Bicycling, spending time in nature, jogging/walking	no	I think the shared roadway (segment4) of the east alignment is a huge concern. It is 1/3 of the alignment and this will delute the very purpose of the trail. I also think the west alignment is much preferable because it will be a nice experience since it goes through a more natural setting.	West
web page	bicycling, spending time in nature, commuting	no	I'm interested in what , if any, LID techniques would be employed in the construction. How much new surface would be created for each alignment? How would the trail connect in the vicinity of McCollum Park? How would N. Creek Park be impacted? Would unincorporated Sno Co resident taxes go to this project?	
email	Bicycling	yes		
newsletter, email	none	yes	Safety issues if trail goes down 14th/13th. Driveways every approx 50 feet, some closer together, loss of mature landscaping (30 yer old) evergreen trees. Potential for accidnets involcing residents/bicylist/peds.	
newsletter	jogging/walking	yes	East alignment seems most feasible and cost effective of 2 south alternatives	East
other	Bicycling, spending time in nature, jogging/walking, commuting	yes	I prefer the east alignment, more direct route bicycling. I like being able to take my kids on foot/bike to places without having to go on B-E Hwy. We own property on 194th and are happy to have the trail come right through.	East
email	Bicycling, commuting	no	I prefer the east alignment due to the fact it is more direct and costs are less to provide funds for other segments. I'm looking forward to the trail being completed!	East

March 2011

North Creek Trail Open House Meetings

How Did you learn about this meeting?	What would you most likely use the trail for?	Were you able to attend one of the open house meetings in 2010?	Do you have any additional comments?	Prefer option
email, web page	Biycycling, spending time in nature, jogging/walking, commuting	no	Only the new developments have sidewalks on Winesap and Filbert. So if I want to ride my bike I have to ride it in my development around and around. So it would be good to have it on the west alignment. I am ten years old.	West
email, postcard	jogging/walking	no	We like the west route.	West
newsletter	Bicycling	yes	I prefer the west route, but support either. It will be important to connect to Burke Gilman and with urban trails.	West
web page	Bicycling	no	I would support the west alignmnet over the east alignment. More scenic and less controversial. Either alternative would be better than nothing.	West
newsletter	spending time in nature, jogging/walking	yes	Prefer the west alignment, because it would be much more convenient for me to use, based on the location of where I live.	West
email	bicycling	no	I like the west alignment best. I look forward to a connector between McCollum Park and the Interurban trail.	west
Ad in Bothell Reporter	jogging/walking	no	I'd vote for the west alignment since it will go through less developed terrain.	west
Ad in Bothell Reporter	spending time in nature	no	Favor west alignment	west
Newsletter via front door	bicycling, jogging/walking	no	Prefer the west alignment. Lack of sidewalks down Winesap is dangerous, would be nice to be able to walk/bike down that road and areas.	west
email	bicycling, spending time in nature, jogging/walking	no	The more scenic route is more interesting. I think that is the west alignment.	west

November 2011

North Creek Regional Trail Open House

Wed, November 16, 6-7:30 pm

Lynnwood High School

Project team attending:

Steve Dickson
Mo Kashani
Andy Smith

Sam Filetti
Tina Hokanson
Beth Larsen

Michael McVey
Jenny Bailey
Yammie Ho

How did you learn about tonight's meeting?

18 - Newsletter
0 - Ad in the Herald

9 - I received an email
2 - Project Web page

1 – Other (mail)

Have you attended any other meetings?

9 - June 2010
10 - March 2011
8 – No

Which options do you think are best, okay or not so good, and why?

OPTION A

3 - Best
7 - Okay
12 - Not so good

OPTION B

5 - Best
6 - Okay
9 - Not so good

OPTION C

18-best + 10 e-mails
2-Okay
2- Not so good

Comments:

Most of the comments mentioned the features in the chart exhibit for preference for C: No wetland impact, separated from road, away from homes, gentle hills, direct route, fewer intersections with roads and driveways.

1. A-best, B-no, C-no

"A" impacts the fewest existing homes. It also doesn't encourage trail traffic to divert onto roads the way both "b" and "c" do. Sara Peterson

2. A-best, B-ok

3. A-ok, B-best, C-no

Impact to neighborhood safety issues – too secluded; Open, more public area better; concerned about lack of maintenance – history show us that the county does not maintain trails – north creek park trail is an example, boardwalk has been un-useable for 2 yrs now. Still no plan to correct or maintain. Would rather not have the trail at all. Find a way to give the money to the schools. What is the plan to maintain? During this time of cutbacks, why are you continuing to build more to maintain. The county cannot keep up with what it has now. Karen Dickens

4. B-best

Increased distance to walk road can walk circle

5. A-no, B -best, C-ok

This can be a dangerous road to cross even with a speed limit@ 25 mph. Less of parking for our house, if the power line access could be used and may be a safer route. This road is very dark at nite, no street lites. Will there be more meetings and infore this project begins? Jim and Irene Blaves

6. A –ok, B-best, C-ok

“B” appears cheaper. I don’t have a strong preference. C is shorter to connect to interurban. Would like to see it completed ASAP!

7. A-no, C-best

I live adjacent to the wetland native growth area. Option A would put the trail at eyelevel with my 2nd story bedroom windows. Option A would require many trees to be removed resulting in the remaining trees being a hazard during the numerous wind storm events we have. Option C is the most direct route. Chan Beauvais

8. A-ok, B-ok, C-best

Phase I, do B and then add C. C is shorter and more scenic and less streets and driveways. Carol Butts

9. A-no, B-no, C-best

Shorter – fewer street crossing, more park like; what is the timeline for the project?

10. A-no, B-no, C-best

C is shortest, important for walking. Best option would be the one that has minimal impact on private property.

11. A-ok, C-best

C is the straightest line, although I’m not sure what impact it would have on homeowners. A would also be a good route. B would be the longest route and I think people coming north will take the streets rather than heading east and then west to the park.

12. C-best

Straight shot, Scenic

13. A-no, B-no, C-best

A & B have more intersections. C appears more scenic, also no wetland impact. C is more direct route to get to park.

14. A-ok, B-ok, C-best

I like the C option because of the cost and length of trail. Gentle hills are nice for a bike or to walk as long as there is clear visibility. Questions: No, I am excited to see this progress along. I’ve lived here 22 years and watch Snohomish County slowly develop recreational parks and other trails. Thank you

15. A-ok, B-no, C-best

Like shorter area through green area

16. A-ok, B-no, C-best

C appears to be more scenic and have less impact on residential houses. Direct route to park also

17. A-no, C-best

Option C is clearly the best option. It's the shortest; it's also over an established path. The cost is lower than C. Option A goes through NOPA which is not acceptable. It goes between homes. Please consider the impact on the environment. Thank you!

18. A-best, B-ok

19. A-best, B-best, C-best

I think they are all good

20. A-no, B-no, C-best

C is most direct, not wetland impact, only 2 driveways, separated from road, away from homes, not most expensive, open space & gentle hills

21. A-no, B-ok, C-best

"A" would go through NGPA destroying the native growth progress that has been made and would cause too many trees to be cut down that have just made progress.

"B" doesn't look like it would be used-people would realize the more direct route up 183rdPI & 10th Dr. Since the trail goes through a neighborhood, prefer the more exposed route for young people to follow – more secure than the shadows of the wooded area. - concerned about lighting on the path - there are no street lights on 185th by park or 186th (between 10th Dr and 12th Dr). Don't want a trail in my back yard. Paid premium for lot on greenbelt

"C"- more direct route using existing trail through power line easement- the homes that it would affect bought their homes with the trail and will be least compromised with updates – Terry Berkley

22. A-no, B-ok, C-best

"A" would require removal of many trees and weaken ground around others-fear trees falling on my property

B&C already have an existing trail, thus the landscape would not be changed as much, B&A also run in a circular path that a lot of people would not use and would cut through local streets. 183rd doesn't seem wide enough for a path alongside it – How would this work? – Steve Berkley

23. A-no, B-ok, C-best

C is most direct, uses existing trail, and easements

A takes the trail seeming out of way to go down 15th Ave SE and requires creation of the trail through existing natural growth area – S. Boehmer

24. A-no, B-no, C-best

C is most direct, not wetland impact, only 2 driveways, separated from road, away from homes, not most expensive, open space & gentle hills

A&B not so good for many reasons – Neither is a direct route, both involve driveways; wetlands are impacted; both run by many homes; neither is very open and spacious. A is very costly- Tobin Dale, Tara Beatty, Teagan Dale

25. A-no, B-no, C-Best

most direct, not wetland impact, only 2 driveways, separated from road, away from homes, not most expensive, open space & gentle hills

26. No choices noted. We are at 19428 Winesap Rd. Our driveway faces the road, it is a blind corner; this may be a problem. More lighting will be needed. Mailboxes will have to be moved. Plants will be moved. Septic drain field runs through our front yard. Garbage out on collection day, if trail is in our front yard? Irene Blanes

How did we do? (Good or Inadequate)

14 good/1 inadequate Notice of the meeting
15 good Printed materials
14 good Meeting format
15 good Graphic displays
15 good Staff courtesy
14 good Project description

Comments:

"hard to read the smaller maps"

"Hard to follow (description)"

"Talked at length with Andy Smith – very informative"

APPENDIX C

General Assumptions for Opinion of Costs

A range of planning level Opinion of Costs for each alternative alignment is summarized in Table C-1. General assumptions are listed below.

Table C-1. Planning Level Opinion of Costs (Excluding R/W Costs)¹

Alignment Alternatives by Trail Segment Designations	Length (mile)	Proposed Typical Section(s)	Major Construction Elements	Range of Costs per Linear Foot²
AB-2	0.58	Sidepath, bike lanes and sidewalks, and separated trail	Retaining walls, planter, and grading	\$200 to \$500
AB-3	0.83	Sidepath and separated trail	Retaining walls, planter, and grading	Below \$200
R-AB	0.10	Sidepath	Retaining walls, planter, and grading	\$200 to \$ 500
BC-1	0.34	Separated trail	Retaining walls and grading	\$200 to \$500
CD-1	0.18	Separated trail and boardwalk	Pedestrian bridge, elevated trail structure with handrail, grading, and sensitive area mitigation	Above \$500
CE-1	0.16	Separated trail and boardwalk	Pedestrian bridge, elevated trail structure with handrail, grading, and sensitive area mitigation	Above \$500
DE-1	0.10	Separated trail and boardwalk	Elevated trail structure with handrail, grading, and sensitive area mitigation	Above \$500
DF-1	0.35	Separated trail	Retaining walls, planter, grading, and sensitive area mitigation	Above \$500
EF-1	0.36	Separated trail	Retaining walls, grading, and sensitive area mitigation	Above \$500
FG-1	0.36	Separated trail and sidepath	Planter and grading	Below \$200
FG-2	0.23	Sidepath	Retaining walls, planter, grading, and sensitive area mitigation	\$200 to \$500
GH-1	0.70	Sidepath	Retaining walls, planter, grading, and sensitive area mitigation	Above \$500
CI-1	1.30	Sidepath, separated trail, and bike lanes and sidewalks	Retaining walls, elevated trail structure planter, grading, and sensitive area mitigation	\$200 to \$500
R-N	0.51	Bike lanes and sidewalks	Retaining walls and grading	\$200 to \$500
R-S	0.43	Bike lanes and sidewalks	Retaining walls and grading	\$200 to \$500

¹ Some of the costs presented in this table were updated during subsequent evaluation. Updated costs were developed for Trail Segments, AB-3, DF-1, and EF-1. The findings are summarized in the main body of the feasibility study.

² The range of costs per lineal foot is based on construction cost, excluding design, environmental, and right-of-way.

GENERAL ASSUMPTIONS

Four configurations were evaluated: separated trail, sidepath, bike lanes with sidewalks, and elevated boardwalk. Widths for each configuration are summarized below and shown in Table C-2. Additional assumptions, including those for the boardwalk configuration, are included below.

- Some right-of-way acquisition is anticipated for the trail corridor. Conservative right-of-way needs were calculated based on the configuration selected for each segment. Approximate public right-of-way widths from the GIS database and property plat maps provided by Snohomish County were used. An average right-of-way width was estimated for roads adjacent to the trail alignment alternatives. Right-of-way need was estimated based on existing available right-of-way and proposed typical trail section. Areas needed for each parcel were estimated based on the width required and the length of the parcel frontage, etc. Estimated acquisition costs were provided by County staff.
- Potential parking sites have not been identified yet; right-of-way costs do not include acquisition of these sites.
- Unit prices were largely based on WSDOT bid analysis history and similar past projects. Assumed sales tax was included in the bid unit price.
- A percentage of total construction costs was applied for mobilization, roadway surveying, traffic control, erosion control, and miscellaneous items because a preliminary design has not been performed at this stage to quantify these items. Markup percentages were selected based on the 2009 WSDOT Cost Estimating Manual and the Plan Preparation Manual.
- Clearing and grubbing limits were assumed to be the same as the estimated footprint widths stated in Table C-2.
- Grading estimates were based on a site review of each alignment. If the area was flat and required minimal grading, it was assumed the excavation quantity is simply a length of segment and configuration depth (assumed average of 1 foot). If the area required more significant grading, the length and depth of excavation and fill were estimated based on the site review data. Excavation and fill for walls were estimated and also included.
- A typical trail pavement section for widening areas is 2.5-inch hot mix asphalt (HMA) over 4-inch crushed surfacing top course (CSTC). For sidewalk sections, a typical section is 4-inch concrete sidewalk over 4-inch CSTC. A bike lane widening typical section is 4-inch HMA over 4-inch CSTC.
- Water runoff was dispersed to the side slope areas in most cases or as much as possible unless the trail was located close to existing buildings and other obstructions and structures. For those cases, infiltration trenches or ditches on one side, with or without underdrain pipes, were considered. A typical 3 feet of trench depth was assumed. Widths for infiltration trenches were assumed to be 2 feet. A 12-inch perforated underdrain pipe was assumed based on past project experience on similar facilities. Porous pavement will also be considered to handle stormwater flow control where soil conditions allow.

- For typical sections adjacent to the roads and filling existing road ditch systems, pipe sizes for the various drainage conveyance systems were assumed based on past project experience on similar facilities. It was assumed no water quality vaults were needed. Flow control still needs to be addressed.
- Culverts for stream crossings as identified by Public Works Environmental Services were included.
- Areas for retaining walls (fill and cut) were calculated based on the length and average height estimated based on observations from the site visits. Conservative wall types were assumed.
- Pedestrian bridge or elevated trail structure such as a boardwalk, if needed, would be 12 feet wide and possibly a prefabricated bridge or pin pile boardwalk with pre-fabricated panels. Length depends on the span lengths observed in the site visits, generally about 100 feet. Unit bid prices would be based on past similar projects in the Cities of Redmond and Bothell.
- It was assumed no restroom facility or trail head facility would be included.
- Widths of segment footprints were provided to the County. County staff calculated sensitive area and buffer impacts, area needed for mitigation based on County mitigation ratios, right-of-way acquisition costs for mitigation area, and construction costs for mitigation area.
- Depending on the crossing condition for each alignment, a new signal was assumed for some major crossings. A unit price was based on past project experience.

Table C-2. Configuration Section Widths

Configuration	Asphalt Trail	Gravel Shoulder	Planter Strip	Estimated Total Footprint (Minimal Grading or with Retaining Wall)	Estimated Total Footprint (Grading Required)
Separated Trail	12 feet	2 feet on both sides	N/A	20 or 25 feet	30 feet
Sidepath	12 feet	2 feet on both sides	5 feet	25 feet	30 feet
Bike Lanes and Sidewalks	5-foot sidewalks on both sides	5-foot bike lanes on both sides	N/A	12 feet	15 feet
Boardwalk	12 feet	N/A	N/A	12 feet	12 feet

N/A = not applicable

The planning-level opinion of costs is summarized in Table C-3 for each of the preliminary alignment alternatives described in Section 4 of the report. During subsequent evaluation, three options were further reviewed for the North Alignment, as described in Section 9 of the report. The planning-level opinion of costs for the three north options are summarized in Table C-4.

Table C-3. Summary of Planning Level Opinion of Costs*

Alignment Alternatives	Length (LF)	Construction Costs (Excluding Mitigation)	Mitigation Construction Costs	Total Construction Cost/LF	Preliminary Engineering (12%)	Environmental/ Permitting (12%)	Construction Engineering (18%)	Construction Contingency (5%)	R/W (Excluding Mitigation Site)	Mitigation R/W	Total Project Costs
AB-2	3,100	\$ 743,065	\$ 168,577	\$ 294	\$ 109,397	\$ 109,397	\$ 164,096	\$ 45,582	\$ 230,251	\$ 64,500	\$ 1,634,865
AB-3	4,396	\$ 711,289	\$ 109,771	\$ 187	\$ 98,527	\$ 98,527	\$ 147,791	\$ 41,053	\$ 1,035,556	\$ 42,000	\$ 2,284,514
R-AB	535	\$ 101,691	\$ 31,363	\$ 249	\$ 15,966	\$ 15,966	\$ 23,950	\$ 6,653	\$ 46,350	\$ 12,000	\$ 253,940
BC-1	1,769	\$ 331,401	\$ 81,021	\$ 233	\$ 49,491	\$ 49,491	\$ 74,236	\$ 20,621	\$ 384,750	\$ 31,000	\$ 1,022,010
CD-1	936	\$ 1,504,338	\$ 266,587	\$ 1,892	\$ 212,511	\$ 212,511	\$ 318,766	\$ 88,546	\$ -	\$ 102,000	\$ 2,705,260
CE-1	830	\$ 979,465	\$ 225,993	\$ 1,452	\$ 144,655	\$ 144,655	\$ 216,982	\$ 60,273	\$ 34,393	\$ 88,500	\$ 1,894,916
DE-1	478	\$ 866,328	\$ 146,361	\$ 2,119	\$ 121,523	\$ 121,523	\$ 182,284	\$ 50,634	\$ 8,265	\$ 56,000	\$ 1,552,917
DF-1	1,822	\$ 1,350,150	\$ 789,307	\$ 1,174	\$ 256,735	\$ 256,735	\$ 385,102	\$ 106,973	\$ -	\$ 302,000	\$ 3,447,002
EF-1	1,900	\$ 3,132,779	\$ 5,715,943	\$ 4,657	\$ 1,061,847	\$ 1,061,847	\$ 1,592,770	\$ 442,436	\$ 154,582	\$ 2,187,000	\$ 15,349,203
FG-1	1,894	\$ 195,963	\$ -	\$ 103	\$ 23,516	\$ 23,516	\$ 35,273	\$ 9,798	\$ 279,888	\$ -	\$ 567,953
FG-2	1,232	\$ 319,101	\$ 125,452	\$ 361	\$ 53,346	\$ 53,346	\$ 80,019	\$ 22,228	\$ 139,493	\$ 48,000	\$ 840,985
GH-1	3,711	\$ 1,418,355	\$ 486,129	\$ 513	\$ 228,538	\$ 228,538	\$ 342,807	\$ 95,224	\$ 257,733	\$ 186,000	\$ 3,243,325
CI-1	6,872	\$ 2,209,050	\$ 676,922	\$ 420	\$ 346,317	\$ 346,317	\$ 519,475	\$ 144,299	\$ 533,072	\$ 259,000	\$ 5,034,451
R-N	2,671	\$ 514,778	\$ 94,089	\$ 228	\$ 73,064	\$ 73,064	\$ 109,596	\$ 30,443	\$ 31,544	\$ 36,600	\$ 963,179
R-S	2,289	\$ 452,820	\$ 120,225	\$ 250	\$ 68,765	\$ 68,765	\$ 103,148	\$ 28,652	\$ 173,969	\$ 46,000	\$ 1,062,346

LF = linear feet

R/W = right-of-way and includes property costs and administrative costs for ROW acquisition. The Opinion of Costs shall only be used for planning purposes, not for construction or capital programming.

* Some of the costs presented in this table were updated during subsequent evaluation. Updated costs were developed for Trail Segments, AB-3, DF-1, and EF-1. The findings are summarized in the main body of the feasibility study. The updated costs for AB-3 are presented under Option A in Table C-4. The costs of Option A are higher because the configuration was revised to be an elevated structure.

Table C-4. Summary of Planning Level Opinion of Costs

Alignment Alternatives	Length (LF)	Construct Costs	Mitigation Construct Costs	Total Construct Cost	Total Construct Cost/LF	Preliminary Engineering (12%)	Environmental/ Permitting (12%)	Construction Engineering (18%)	Construction Contingency (5%)	R/W Mitigation (Excluding Site)	Mitigation R/W	Total R/W	Total Project Costs
North Alignment A (AB-3)	3,396	\$ 1,713,468	\$ 420,790	\$ 2,134,258	\$ 628	\$ 256,111	\$ 256,111	\$ 384,166	\$ 106,713	\$ 1,035,556	\$ 483,000	\$ 1,518,556	\$ 4,655,915
North Alignment B (AB-3a + R-AB + AB-2b)	4,347	\$ 1,128,074	\$ 120,226	\$ 1,248,300	\$ 287	\$ 149,796	\$ 149,796	\$ 224,694	\$ 62,415	\$ 1,035,556	\$ 138,000	\$ 1,173,556	\$ 3,008,557
North Alignment C (AB-2c + AB-2b)	2,730	\$ 1,831,394	\$ 211,702	\$ 2,043,095	\$ 748	\$ 245,171	\$ 245,171	\$ 367,757	\$ 102,155	\$ 560,000	\$ 243,000	\$ 803,000	\$ 3,806,350

LF = linear feet

R/W = right-of-way and includes property costs and administrative costs for ROW acquisition. The Opinion of Costs shall only be used for planning purposes, not for construction or capital programming.